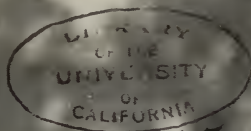


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GIFT  
MAR 17 1913



# Gleanings in Bee Culture



VOL. XLI. MARCH 1, 1913, NO. 5.

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# Cleanings in Bee Culture

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VOL. XLI.

MARCH 1, 1913

NO. 5

## Editorial

No one can say, now, that women do not make good beekeepers.

THE NATIONAL CONVENTION FEB. 12, 13.

THIS was held at the Grand Hotel, Cincinnati. While the attendance was not large it was representative. At the first session it looked as if there might be an "irrepressible conflict." The delegates present were not agreed as to the best policy to pursue. But all is well that ends well, for the points of difference were referred to a committee, and the reports of this committee were finally agreed to. A brief report will be given later, together with a half-tone view showing the members and delegates present.

FEEDING HARD CANDY TO BEES.

WE have been giving paper pie-plates filled with hard candy to some of our colonies that seemed to be running a little short, for the last three months. This candy is made of twenty parts of sugar to one part of honey, the whole moistened with water enough so that it can be boiled. It is then heated to a temperature of 275 degrees Fahrenheit, and as soon as it reaches this point it is poured into the pie-plates mentioned. These are turned upside down right over the cluster, and so far they are giving excellent results. They are not affected by moisture, as Mr. A. C. Miller feared would be the case. Indeed, they preserve their shape perfectly, even when empty. As this winter has been somewhat open in most localities, there is danger of starvation.

Soft candy may be as good. We have tried it to some extent, but prefer the hard.

BEES ESCAPING FROM A BROKEN PACKAGE MADE TROUBLE AMONG POSTAL CLERKS.

AS we have intimated before, we have feared that some one not acquainted with the difficulties would attempt to send bees by parcel post, and that the cage would be broken and trouble be made at once. This is exactly what has happened. Just as our editorial form for the last issue was going to press, as mentioned briefly on page 106, we received a clipping from the San Francisco Chronicle, of Monday, Feb. 3, telling

of a lot of bees that took possession of a postoffice at San Rafael, on Feb. 2. Particulars were not given, except that, when the postal clerk opened the parcel-post pouch, the bees flew out of it, and stung him on the face and hands. The box in which they had been confined was smashed in transit, giving the bees the run of the mail-pouch, and, later on, of the postoffice.

As stated in our last issue, there seems to be no provision, at present, authorizing the shipment of bees by parcel post; and if the careless experiments along this line do not cease, there is danger that bees may be altogether barred from the mails, thus bringing about a serious state of affairs for queen-breeders and beekeepers as well.

IN MEMORIAM OF D. H. COGGSHALL.

IT seems but a few weeks since we spent a very pleasant half-day with Mr. D. H. Coggsall the last time he was in Medina. We had met him several times before at conventions, but we became much better acquainted with him at this time, and it was with a shock, therefore, that we learned of his very sudden death as mentioned in our Feb. 15th issue. It seems that our friend had made all preparations for spending the winter in Florida, as was his custom. His home west of Groton had been closed for the winter, and every thing had been arranged for a long absence. How little anybody thought at the time that these preparations were then made for the last time, and that the departure was a final one, the return to the home-place to be only after death!

The party, consisting of Mr. and Mrs. Coggsall, and their daughter and her husband, Mr. H. J. Blanchard, had already left Groton, and had proceeded on their way south as far as Sayre, Pa. While waiting for the connecting train for the South at the Lehigh Valley station, Mr. Coggsall died very suddenly of heart failure. He had anticipated another pleasant winter at his southern home at Stuart, Fla., where he had spent every winter for eight years.

Mr. Coggsall was born Dec. 1, 1847, in

Groton, in which township he made his home all his life. He was a brother of W. L. Cogshall; and although the latter has always been known as one of the most extensive beekeepers in the world, his brother was also extensively engaged in the business, having had at one time 800 colonies.

Although a quiet beekeeper, our friend was a progressive one, and we feel that the apicultural world has lost another pioneer. He was not a frequent contributor to the bee journals, and yet he will be missed—missed most by those who knew him best.

#### THE RELATIVE FOOD VALUE OF HONEY AND SUGAR-SYRUP STORES FOR BEES.

ELSEWHERE in the Canadian Department Mr. Byer makes the assertion that honey is superior to sugar stores, and then puts the proposition up to the editor.

During the 70's or 80's, we do not remember exactly when, R. L. Taylor, James Heddon, Prof. A. J. Cook, and, we believe, W. Z. Hutchinson, all of Michigan, each independently of the other, made some tests as to the relative value of sugar syrup and honey for wintering. The testimony of all the men, if our memory serves us correctly, was to the effect that, pound for pound, sugar syrup was much to be preferred to ordinary honey, and very much better than the ordinary dark or off-flavored fall honey. We had supposed that the whole beekeeping world had accepted this as a fact. For brood-rearing purposes honey has a slight advantage, because practically all honey contains minute quantities of pollen. In fact, Professor Brown, of the United States Bureau of Chemistry, once said that the source of many honeys is recognizable by the pollen grains when viewed under a microscope.

The primary reason for preferring sugar syrup is that it is less stimulating. A farinaceous diet on the other hand has a tendency to make the bees active when they ought to go into their winter sleep, or, as we say, into a semi-state of hibernation, or what amounts practically to suspended animation. In that condition respiration is low and the consumption of stores light. Sugar syrup of course has no pollen in it. It was shown in the 80's that the bees would eat anywhere from 10 to 50 per cent less of sugar stores than of natural stores during the winter, the percentage of variation depending on the quality of the honey. We do not go so far as to say that the presence or absence of pollen contributes to poor or good wintering. But when we come to draw the line between the two foods, the almost universal verdict has been in favor of sugar

syrup. On the other hand, it is generally considered that it is not necessary to extract good honey and feed sugar stores unless the difference in price between the two products warrants it. The extracting and feeding have a tendency to stir up a colony. Feeding in the fall with sugar or honey, especially if the queen is a young one, has a tendency to induce brood-rearing. Sometimes this is desirable, and sometimes not; so when we come to consider the relative food value of sugar and honey there are several factors to take into account.

Friend Byer, practically in opposition to all the rest of the fraternity, makes the statement, "I now *know* that at the very least it takes a pound of sugar to have that value." "That value," as we understand it, is a pound of honey. We do not say he is wrong, but we should like to have him present his proofs. Our correspondent's opinions we value; and when he challenges the editor and perhaps all orthodox beedom he is entitled to consideration.

#### A TRAMP BEEKEEPER SPREADING BEE DISEASE; AN AGGRAVATING CASE.

A MOST exasperating case has come to our notice of a certain tramp beekeeper, who, it is alleged, is moving bees by the carload from infested districts into localities where no disease exists. He seems to have no scruples about squatting an apiary of bees infected with European or American foul brood next to a healthy yard belonging to a permanent resident. When the locality becomes so rotten that even *he* can not stand it he moves to new territory, there to repeat his nefarious work. He practices migratory beekeeping on quite an extensive scale; and as he goes from one locality to another, it is said he takes no precaution to eliminate disease from his own bees; is careless about leaving tools and appliances, daubed with honey, after extracting, where all the bees in a locality can get at them, and thus carry the infected honey to their own hives. Numerous complaints have come in from beekeepers where he has been operating. Evidently nothing can be done, because he violates no law. He squats in localities where there are no foul-brood laws, or else where the laws are so carelessly drawn that he can not be restrained. It is claimed that he is spreading bee disease right and left: that he even *jokes* about it, saying that bee disease is his best friend, because he can go into a locality and clean out every beekeeper who may be a natural competitor. How is that for unadulterated meanness? Can you beat it?

It is high time that States in the West



that do not have foul-brood laws should secure the necessary legislation at once. Unfortunately, California is handicapped by a very ineffective county law. These county laws are not worth much at best. What is needed is a law that gives the State Entomologist or State officers police authority over the whole State to clean out bee disease wherever it may exist, and at the same time put a stop to the kind of work above described. A federal law should be enacted at once; for unless something is done speedily, such tramp beekeepers can spread more disease than all the inspectors in the country can eliminate.

"THE MANIPULATION OF THE WAX SCALES OF THE HONEYBEE."

THIS is the title of a new bulletin from the Bureau of Entomology, Circular No. 161, by Dr. D. B. Casteel, who has been in the Bureau for the past two summers, pursuing various kinds of work under the direction of Dr. E. F. Phillips, in Charge of Apiculture. We have read carefully this bulletin, and regard it as one of the most interesting and valuable that have ever been put out by the Bureau. We say it is interesting, and it is intensely so; and valuable, because there are certain facts presented which may enable the ordinary beekeeper to determine when he can have comb building, and when, perhaps, he may not.

About 35 years ago the writer was interested in this very subject covered by Dr. Casteel; and especially how bees put pollen in their pollen-baskets; but at that time we were not in possession of the apparatus, the time, nor the skill necessary to do this work. We watched the operation, or tried to, whereby the bees remove their wax scales; but it was done so rapidly that the whole performance seemed but little short of sleight of hand. Somehow the scales would be removed from the under side of the bee's abdomen, and transferred to its mouth; and likewise pollen would be transferred from the fore feet to the hind legs; but just how, we could not determine. But Dr. Casteel has worked this out by means of a binocular microscope that makes every detail of it, from start to finish, clear and plain. He then goes on to prove up his work from a purely mechanical and structural point of view.

Briefly stated, the process is this: The wax scales are scraped off by one of the large joints, or planta, of one hind leg, the spines of the planta piercing or catching into the scale; then the leg, by a peculiar maneuvering, is moved up to where the fore legs may grasp the scale. At this

point of proceedings the scale is manipulated or masticated in the mandibles, when it is applied to the comb. During the process just explained, the bee stands on three legs (the two middle legs on either side, and one hind leg not in action), while the other hind leg and the two fore legs, in connection with the mandibles, perform the manipulation. The whole thing is shown by some elaborate and careful drawings. We hope to have the privilege of presenting some of these later on in these columns.

Dr. Casteel shows that the so-called "wax-pinchers" in the hind legs have nothing to do with the manipulation of wax, but are designed for another purpose, and that each individual bee removes its own wax scale.

It has been popularly supposed that the bees remove the scales from each other; but the author shows that this is not the case. The scales are sometimes found scattered throughout the hive and on the bottom-board. In some instances they show the marks of the spines on the planta of the hind legs. In others they were probably dropped accidentally by the bees in that wonderful sleight-of-hand performance of which we have been speaking. In still other cases the scales show no markings whatever, and the presumption is that they simply fell off the bees when they reached a certain stage of development.

Dr. Casteel also confirms the observation of Dreyling, that there are certain ages and certain seasons when the bees will develop these wax scales more than others. From this it would appear that there will be times when bees could not construct combs to any great extent, even though they were liberally fed. In a practical way it has been found that sometimes even when the bees are fed they will not build combs; and the probabilities are that they simply can not, because the colony is made up of bees too young, too old, or both. Usually the condition of a honey-flow can be supplied artificially by feeding.

This paper or bulletin may be obtained by simply addressing the Superintendent of Documents, Government Printing Office, Washington, D. C. Ask for Circular No. 161, Bureau of Entomology, by D. B. Casteel, and enclose 5 cents. We hope our subscribers will ask for it, as we should like to have the Secretary of Agriculture, or, more exactly, the Bureau of Entomology, know that the beekeepers of the country appreciate this kind of work.

In our next issue we shall refer to another bulletin equally interesting and valuable by the same author on the subject of how the bee gathers pollen.

## Stray Straws

DR. C. C. MILLER, Marengo, Ill.

DR. E. F. PHILLIPS made a short visit with us lately. Just now he is trying to learn what instruction to give the bees for best wintering in cellars. I practiced cellaring bees before Dr. Phillips was born; but he gave me points on it that made me open my eyes.

DAVID ROBERTS says, p. 116, "Shelter is not conducive to swarming except so far as it favors brood-rearing." Doesn't the kind of shelter have a bearing? The shelter of an apple-tree tends to prevent swarming. The shelter of buildings, bushes, etc., on all sides, preventing a free circulation of air, tends to favor swarming by making the bees too warm.

J. E. CRANE, I think you have things straight about European foul brood, p. 84, and it might also be added that a change of queens would be helpful, even if the new queen be not an iota different from the old one; but when a new queen is introduced there is nearly always at least a little break in brood-rearing, and that helps the bees about cleaning up.

"In 1896 Bradstreet's compilation of the wholesale prices of 106 commodities, including all the leading commodities of commerce, was 59,124; in 1900 this figure had risen to 78,839; in 1905 to 80,987; and in 1912 to 90,362."—*Daily*.

Let us see how the price of honey compares with this. Take quotations for comb honey, Sept. 1, in each of the years named, and find the average of the highest figure in each market. In 1896 it was 13.3 cents. If the advance in honey was the same as in the 106 leading commodities named, then for the years 1900, 1905, and 1912, respectively, it should be 17.7, 18.2, 20.3. It was 16, 13.9, 17. Take extracted in the same way. In 1896 it was 6.6 cents. In 1900, 1905, and 1912, respectively, it should be 8.8, 9, 10. It was 8, 7.2, 9.4. No doubt other factors have a bearing, which might make the showing better or worse; but in a general way it would seem that honey has not climbed with other commodities. [This is interesting in more ways than one. It shows that the price of honey declined from 1900 to 1905, and from that time on, especially beginning with about 1908 or '9, prices on food began to soar. This onward and upward tendency advanced the honey market at the same time, but not in proportion, as it would appear, to the price of other food stuffs taken as an average.—Ed.]

"ONE-POUND section" is a term in common use; yet, strictly speaking, the one-pound section is a sort of myth, for not often is a section found which weighs 16 ounces, said section being  $4\frac{1}{4} \times 1\frac{7}{8}$ , which is the section mostly in use. For years there was more or less dishonesty about these sections, for grocers too often sold them as full pounds. Now, however, the public is better informed, and there is not so much trouble on that score. Custom, however, varies, and in some places honey is sold by the section and in other places by the pound. Our honey quotations are given by the case, also the pound. Is there any likelihood that, in the near future, there will be uniformity in this regard? Will the Cincinnati convention dare tackle the question? There is a gradual increase of quotations by the case. Is that really the better way? and if so, can it be made the uniform way? [Yes, it is true that the one-pound section, strictly speaking, is a misnomer. To get a section of that weight  $4\frac{1}{4}$  square would make it necessary to have it 2 inches wide for the combs to average one pound. This makes a comb too thick to insure quick ripening and quick sealing. A section  $4 \times 5 \times 1\frac{3}{8}$ , plain, comes nearer to a pound; but to *average* a pound it would have to be  $1\frac{1}{2}$  inches wide. A relatively large thin comb is far better than a small thick one. This is one reason why the  $4 \times 5$  size is crowding the  $4\frac{1}{4}$  square out of some markets. We believe the time will come when it will be the universal section.]

From every point of view, we believe it is better to quote sections by the case rather than by the pound. Under the Colorado grading-rules this insures a more uniform weight of sections. It compels the producer to aim for a higher standard, both as regards weight and filling; and this is right. If the cases are sold by the pound, it has a strong tendency to let in any bulged or fat sections that are unsightly, as well as those that are lean and unsealed. Under the Colorado rules, the sections must not weigh more than a certain minimum nor more than a certain maximum. If the producer will "separator" or "fence" his supers, and use full sheets of foundation, he is usually able to meet the conditions of the grading rules. We are, therefore, strongly in favor of selling by the case, providing the individual sections are graded according to the Colorado rules. If they are not so graded, the cases should have minimum weight.—Ed.]



## Notes from Canada

J. L. BYER, Mt. Joy, Ont.

Some of our Ontario chaps have gone to California for the *winter*; and judging by that picture on page 83, Feb. 1, they seem to have found what they went after.

\* \* \*

The "short course" recently held at Guelph was pronounced a success by all who had the good fortune to be present. The writer was there for only two days, but that was long enough to convince him that the students were satisfied that they were well rewarded for their time and expenses. Mr. Clark, of Borodino, gave a series of lectures on queen-rearing, while a number of Ontario men assisted in the lectures and discussions. Among them were Messrs. Sibbald, Armstrong, Nolan, Anguish, Schrenck, Bainerd, Harkness, and a number of others well known to the fraternity.

\* \* \*

Dr. Miller says on page 790, Dec. 15, that a temperature of 32 to 35 degrees would be considered ideal wintering, even if there were no flight for four or five months. While we shall never have the privilege of proving the matter one way or the other, I venture to say that wintering would not be every thing desirable under such conditions, as the bees would be more or less uneasy all the time, and consume stores and go to brood-rearing—in the end would not come out as well as though the temperature had been much lower than that during most of the time the bees were confined. Bear in mind this is just my *opinion*, and I make no promise to try to *prove* the thing one way or the other.

\* \* \*

Regarding the matter of sugar syrup versus natural stores, page 790, I am surprised when the editor says that reports for many years back have shown that a given amount of sugar syrup will go further than the same amount of natural stores. Surely you do not believe that a pound of *syrup* will go as far as a pound of good *honey*. While I have to feed lots of sugar syrup some falls, certainly I do not place that proportionate value on the syrup as compared with honey. I used to *think* that a pound of syrup would equal a pound of honey in so far as lasting qualities are concerned; but I now *know* that at the very least it takes a pound of *sugar* to have that value. Emphatically, I again say that, if your colony is short weight 15 pounds, instead of giving that amount of *syrup* to make the colony equal to the one heavy enough with honey, use at least that many

pounds of *sugar* instead, and then see in the spring if the syrup-fed colony is ahead of the one wintering on the same weight of honey. [See editorial comment elsewhere. —Ep.]

\* \* \*

I never knew a season in which there has been such a demand for honey as the present one. Whether the consumption is increasing or the last crop much shorter than we estimated, one thing is certain: Many thousand pounds of honey could have been sold during the past three months if we had had the goods. Only recently a very responsible firm asked me to send them *at once* 14 or 15 thousand pounds, and I was unable to send them that many hundred pounds, let alone thousand. Some think the shortage is too short, even from the producer's standpoint, as it is feared that, being unable to get honey at a reasonable price, they will try to get a substitute to take its place. While I do not fear that very much, how I would have liked to fill that order for 15,000 pounds!

\* \* \*

The vagaries of the weather are hard to explain; for while the conditions have been unusually cool, not to say cold, in the far West, here in Ontario the months of December and January were much milder than usual. Since February we have had some winter weather, but at no time this month has the thermometer gone below zero. Only twice this winter have we had a zero temperature; but as we have no snow the conditions are not any too good for the clover. However, the months of March and April generally decide the clover question. Only once have I known damage to be done in February. This mild winter should be good for outdoor wintering; and, barring one single report to the contrary, all who have written me say that the bees are wintering well. A number have told me that their bees in regular house cellars have been uneasy, as it has been difficult to keep the temperature low enough. On getting these reports I wrote to a friend who lives near my bees, some 200 miles east of here, asking him to go into the caves for the purpose of seeing how the bees were. He reported that they were perfectly quiet, and seemed to be wintering in splendid condition. This would lead one to believe that the repositories almost if not entirely under ground, roof and all, are to be preferred to regular house cellars where the air is more apt to be subject to outside conditions and variations.

## Beekeeping Among the Rockies

WESLEY FOSTER, Boulder, Col.

### CONCERNING COUNTY COMMISSIONERS.

Bills for bee inspection are presented to the county commissioners before they are allowed to be paid by the treasurer. The average county commissioner knows almost nothing of the character of the work of a bee inspector. If the county officers knew the character of the work to be done there would be little questioning as to the value of the inspection, and there would be more questioning as to the actual work accomplished. The county commissioners should require a detailed account of the apiaries inspected, number of colonies examined, number of colonies diseased, number treated by the bee owner, and the percentage of decrease in the disease from year to year. Bee inspection is a farce unless money enough is available to give thorough inspection of all the bees in infected areas; and it is still more a farce unless the inspector forces the cleaning-up of every diseased colony.

\* \* \*

### PAY TAXES ON YOUR BEES.

Patriotism of the simon-pure variety is shown in honest tax schedules with nothing legitimately taxable reserved from entry. The bogus kind is found where tobacco smoke is thickest in the political meetings where they "whoop 'er up" for the party that saved the country from destruction. The bogus kind always does the loudest clapping when the picture of Washington or Lincoln is thrown on the screen, or the flag is unfurled. If we appreciate good roads, schools, and progressive public enterprises, we should consider it a privilege to contribute our share to the public welfare. And if the public funds are being misappropriated we should be just as loud in our denunciation and active in righting the wrong as is possible; and for the bee-man to pay his full share of taxes will give him the right to ask and demand full protection from his county, State, or national government in the way of bee inspection.

\* \* \*

### TINKERING WITH FOUL BROOD.

Out in Idaho there are still a few beekeepers who cling to the idea that American foul brood can be cleaned out of diseased combs with formaldehyde. Those who still hold this idea certainly have not tried it thoroughly. Our experience with fumigating combs was quite extensive and thorough; and while the disease did not reappear in every comb so treated at once, every

comb showed the disease as prevalent as ever before the season was over. For the average honey-producer to attempt the experiment is folly. It may be possible in time to find a method of fumigation that will kill the disease; but the bee-man will make money by leaving the experimentation to the experiment stations. Follow the known methods, and work your diseased combs into wax. Get the wax worked into foundation, and put full sheets in your brood-frames, and you will lose scarcely any thing but the work.

\* \* \*

### HOW TO GATHER SWEET-CLOVER SEED.

A device was illustrated, p. 454, July 15, 1912, called a sweet-clover-seed stripper; so, wanting to gather some seed, I made one which was similar. It would not work satisfactorily, so I placed in the center of the large sheet made out of several old bed-ticks, a large box. Over this box the sweet clover stalks were thrashed in convenient-sized handfuls. The larger part of the seed falls into the box; but what falls outside can be easily gathered from the sheet. The seed then requires sifting through a screen of about a fifth-inch mesh to take out the sticks and leaves. The seed will not sift through ordinary window-screening, as the unhulled seeds do not readily pass through. By rubbing hard a considerable amount will hull out, but the leaves are ground into a fine dust by so doing. Sweet-clover seed should be run through a fanning-mill in order to remove this dust.

### CUTTING THE CLOVER.

The seed rattles off the stalks better if it is ripe before thrashing. To prevent the seed rattling off while cutting the clover, select a time after a damp period or a rainy spell. The seed will not rattle off so much if cut just before it turns brownish black. The seed will ripen if cut and laid on the ground in piles.

A scythe is not to be recommended for various reasons. Much of the seed is lost; and, besides, it is difficult to work even a brush-scythe on the coarse stalks. There is a chance that weed-stalks will get in with the sweet-clover stalks, and this should be avoided.

The best method is to cut the stalks by hand with a sickle, piling it up as cut. A half-acre of sweet clover furnishes me 350 pounds of fine seed. The work of gathering the seed required about five days, every thing counted.



# Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

How would this sound—cellar wintering in California? Not as strange as it would have sounded at one time.

\* \* \*

While Editor Root, Dr. Miller, and Mr. Byer are sparring over the question of how bees winter on solid combs of honey, the most of us are wondering how they ever reached the winter with so much honey any way.

\* \* \*

When I read the letters of those old-timers who were subscribers to GLEANINGS shortly after I was born I feel quite young; but when I stop to think that I myself was a subscriber back in the eighties I feel that I am getting old fast enough.

\* \* \*

FEEDING UNNECESSARY IN THE SPRING IF  
THE COMBS ARE ALREADY WELL SUPPLIED  
WITH STORES.

After stimulating some of my colonies for three weeks with sugar syrup I opened them in order to see the results of my kind care, and was gratified to find much brood started. Curiosity led me to open some others, and they had as much as or more than the ones I had been feeding. I doubt if there is much gained by feeding a normal colony that has plenty of stores, for the purpose of inducing them to rear brood. Pollen is a greater aid in that direction, and more to be desired, than additional stores. A weak colony short of stores would doubtless be encouraged to more liberal use of its meager supply of stores if there were more coming in daily; but where stores are no object one must look to other conditions to induce brood-rearing, and nothing is better than a supply of pollen adequate for each day's use.

\* \* \*

PROSECUTION WARRANTED IF DISEASED COLONIES  
ARE SHIPPED WITH FULL KNOWLEDGE  
OF THE OWNER.

Mr. Wesley Foster, Feb. 1, answers my query as to whether a carload shipment of bees that were prevented from being shipped into Colorado were known to be diseased. For the most part I like Mr. Foster's answer; but on one or two points I wish to make a suggestion. He says, "Our Colorado law is broad enough so that I think an inspector would be upheld in destroying all diseased bees upon arrival. This would not be just unless the disease was being introduced into a clean district." I will agree

with Mr. Foster that, in a case of this kind, stringent means should be resorted to; but at the same time I do not believe that a man's property should be destroyed for the benefit of society unless society is willing to compensate for its loss; for to throw the burden on the individual when the benefits are enjoyed by the entire community would be manifestly unjust; and it seems to me poor law also. The same would be true anywhere. I have opposed the destruction of bees, diseased or otherwise, where they were shipped in good faith as being free from disease, but were later found to be diseased. If it is found necessary to destroy, there should be some compensation for the loss unless they were shipped with the knowledge that they were diseased. Then I believe they should not only be destroyed, but the shipper should be vigorously prosecuted.

\* \* \*

PROSPECTS FOR HONEY.

Conditions in California seem to have changed for the better. We have just had another inch of rain, which helps to add new hopes at least. Indications now are that there will be sufficient orange bloom to supply those who are depending on it for their main flow. I have given the sage very close inspection, and find that some of it is damaged beyond my greatest fears, while much of it is injured less than I had supposed. The situation in this locality is about like this: In the small valleys and bottoms of the canyons the bloom is not only killed, but much of the wood (at least that part of the wood from which the bloom comes). On the sides of the canyons there are increasing signs of life; but the signs are deceiving at this point; for while there are plenty of green leaves on the twig-tips, the bloom-buds within are dead. As we go on up the canyon sides the green increases rapidly, and a point is soon reached where there is no indication that there had ever been a freeze. This condition rules, no matter how small the canyon or what the elevation, and is only in keeping with the old and well-known fact that the cold air holds its position below the warm, hence the frozen and dried tops in the little valleys and the bright green higher on the canyon sides. It is really remarkable to see how well defined these lines are shown by the green and the lack of it. Forty or fifty feet up the canyon sides, above bushes that are brown and dried from frost, there are bushes that seem never to have been touched.



## Conversations with Doolittle

At Borodino, New York.

### LONGEVITY OF QUEENS.

"Am I right in thinking that all improvement in bees must come more largely through the queen than otherwise, inasmuch as one can have no certain control of the drone? and in order to be sure of being on the right track when working for long-lived bees, should not the mother of these bees be long-lived also?"

"Yes, I think so."

"But if this is the case, how does it happen that nearly every queen-breeder as well as the majority of our most prominent beekeepers advocate that no queen be allowed to live more than two years? Many are advocating the superseding of all queens at the close of the honey-harvest after their first year's work."

"This is something which has puzzled me as well as you; and I never could see how any great improvement of stock would result in any apiary where new queens are reared each year or two to supersede all those reared one or two years before. I have noticed many times that such colonies as kept the hive populous during the summer months with brood to the amount of only five or six Langstroth frames full, and stored the most honey, always had queens which lived, when the apiarist allowed them to do so, to a good old age. But the trouble has been that most beekeepers have had prolific queens so drilled into them that no queen that will not produce brood in excess of this is not allowed to pass her second winter. And because of this, the goose which laid the golden egg has no chance to prove her superiority above the rest. Queens which live to be four or five years old give to us our starting-point when breeding for the bees which make the greatest amount of honey with the least expenditure in bee force and brood-rearing. Much honey is used by *scrub colonies* in rearing a multitude of larvæ from queens whose average usefulness does not exceed a year and a half or two years. And these long-lived valuable queens, with hardly an average amount of brood, are the ones sure to be killed by the beekeeper who tells us that, if we would have the best results in hives full of brood, all queens must be superseded after their first or second year of laying."

"But would you recommend rearing queens for the improvement of stock from a mother which is four or five years old?"

"In regard to rearing queens from such an old queen, I do not claim that a queen is better at that advanced age than she is

when younger. Only this: I am not sure, at a younger age, that she possesses the desired longevity. Where any queen from a long-lived strain of excellent workers has lived to an age of five years I expect that her posterity, both workers and queens, will be remarkable for longevity as well.

"A good guess can be given regarding what young queens will prove to be as to length or shortness of life in two ways. First, if during the first half of the first month of May in which a young queen lays it is found that the colony of a young queen is building up while others are dwindling (all colonies, of course, having had the same protection and stores during the winter, and being equally strong at the beginning of the season), then one would not be far out of the way if he concluded that those building up have queens and bees with a promise of long life, while the others do not have queens fit to become breeders.

"Second, after a young queen begins to lay in a full colony, and after the swarming season is over, if a frame is put in such a colony having a starter of worker comb foundation in it, then, if the frame is filled with worker comb, I consider this queen worthy of further testing. If drone comb is built I do not expect much from her beyond the first or second year."

"But don't you think that there are other influences which tend toward longevity?"

"Surely I do. But, as I hinted before, the *queen mother is the starting-point*. The worker larvæ as well as the queen larvæ must be properly fed. Undoubtedly you have noticed that some larvæ as soon as hatched are fed much better in some colonies than they are in others. I have seen larvæ in the colonies of my best queens which were fed so abundantly that one might suppose that royal jelly was being given them. They actually floated in their creamy food until almost, if not quite, the fourth day. Other colonies are fed so sparingly that it requires microscopic vision to see that there is any food in the cells for the little six to twenty-hour-old larvæ to eat. It is needless for me to say that I do not consider these underfed larvæ fit to use under any circumstances for queen-rearing. Queens which will live four or five years can not be reared from such larvæ. Where such are nursed as queens (by a change of bees or different surroundings), their life is so restricted that from six months to a year is sufficient to find the bees themselves superseding them for something better."

## General Correspondence

### HOW A WOMAN MANAGES THE HEAVY WORK IN AN APIARY

BY MISS EMMA WILSON

[As most of our readers know, the writer of this article is Dr. C. C. Miller's sister-in-law, and his right hand man(?) in the apiary. Because of her long experience and training under such a teacher as Dr. Miller, we think that Miss Wilson deserves the title of "Dean of our Beekeeping Sisters.—Ed.]

The question is no longer asked, "Can a woman successfully run an apiary alone?" It has been demonstrated too many times that she can and does, for there are many apiaries run entirely by women, and successfully too. But there is no denying that, in the running of an apiary, there is heavy work that must be done. How can a woman manage this heavy part of the work?

The experienced bee-woman has learned to take advantage of many little kinks that lighten her work, and knows, like the good general that she is, how to plan her work so as to accomplish what has to be done with the least expenditure of strength and labor. Especially is this necessary for the rather delicate woman who has no great amount of strength to spare.

To lift out a frame of brood, bees, and honey, and look it carefully over is quite easy; but to handle these frames at arms' length, or nearly so, gets to be work before night; and especially is this true before the muscles become accustomed to the work. So, begin by doing only a little at a time, gradually increasing the amount done each day.

When a colony must be moved, don't try to lift it all at a time. Take an empty hive and lift out part of the frames, putting them into the empty hive; then the rest can be lifted easily. Still, there may be times when it is desirable to move hives without opening them, as when taking in or out of the cellar. In that case it may be best to get a man to do the lifting. But if no man is available, possibly some woman can be found who will help; and if the hives have cleats on each end, the cleats running clear across the hive so that a rope can be slipped over them, you will find that two can carry a hive quite easily by each taking hold of the rope on opposite sides of the hive. An endless rope is used, and it can be quickly thrown over the cleat on each end.

The really hard work begins with the harvest, when there are so many supers to be lifted off (often four or five, and sometimes more), before you can reach the brood-nest; and when you go through your colonies every eight or ten days it means

work to lift these same supers off and put them all, or the larger part of them, back again, after going through the colony. But it makes some difference how the work is done. Instead of putting them on the ground, or leaning them against the hive, have an empty hive-body ready and pile the supers on that as you take them off. It is much easier to lift them from these than from the ground, and they will go back to the hive exactly in their previous order. Sometimes, however, it is desirable for some reason to change the order. Each super is inspected as it is taken from the hive; and any change in the order will be made as the supers are taken from the hive. Then when they are to be put back on the hive no time is lost in a second inspection. Another good thing about this arrangement is the immunity from robbers. When robbers are at all troublesome a robber-cloth can be thrown over the pile of supers, and they are safe, often allowing you to keep on working when otherwise you would be obliged to quit.

But if I were obliged to name just one item in saving hard work in the apiary it would unhesitatingly be—*keeping queens clipped*. I have not had a great deal of experience in climbing after swarms; but the little I have had has led me to believe that there is nothing more exhausting than climbing after swarms on a scorching hot day; and climbing after swarms will make *any* old day scorching hot. It is an exhausting, nerve-racking, temper-trying experience that, to my mind, is totally unnecessary. Of course, there will be an occasional swarm that may elude you, and issue with a virgin queen; but such swarms are the exception, and only serve to make you supremely thankful that you don't have to climb after *every* swarm that issues. Indeed, after one such experience, what bliss it is, when the next swarm issues with a clipped queen, to pick her up, cage her, lay her at the entrance, and nonchalantly walk away to attend to your own affairs and leave that swarm to do the same! Doesn't that sound alluring to those of you who still have unclipped queens, and are climbing after those dreadful swarms? Just try queens with clipped wings, and see if you ever want to go back to the unclipped ones again.

"Would be glad, too, if you could only do the clipping, but you can't." Oh! yes, you can—no trick at all after you are used to it. Just practice on a few drones until you get over feeling nervous about it.

You ask me, Mr. Editor, for something



new in the matter of women's bee-dress. Really I have nothing new to offer in that line. The only extras I don for the apiary are a large denim apron with two big pockets, gloves with sleeves attached, and a veil. The sleeves sewed to the gloves are white, and are fastened together in the back with a band between the shoulders, securely sewed to the top of each sleeve. A similar band fastens them in front, only the band in this case is sewed to only one sleeve. The other end of the band is furnished with a button-hole, and a button sewed on the other sleeve completes the fastening. This makes it easy to slip the gloves off and on when you wish to clip a queen. The veil is drawn down taut, and fastened with a safety-pin.

Marengo, Ill.

### A WOMAN IN THE SPHERE OF ASSISTANT BEEKEEPER

MRS. LIZZIE SHIELDS

I can scarcely, as yet, claim to be a beekeeper; but my husband has started, and I help him. In 1906 a farmer whose cattle we pastured for the summer offered us in part payment a colony of bees which we accepted. They arrived in November, when, according to advice received, we dug a hole and buried them for the winter. The following May we found the hive afloat, and every bee dead—drowned by the melting snow. We steadfastly gazed on the bees that were dead, and bitterly thought of our lost five-dollar bill.

In 1907 the man again brought his cattle to pasture, and joined us in our lamentation. He said we should have made a drain to run off the surplus water. He wanted us to try again, and offered us a colony for half price. Again we agreed, and again put the hive in the same place; but this time we had a drain; and, lo! on bringing them out the next spring they were alive and in good condition. They were common black bees in an old box—very primitive indeed. We began to read and study about bees, and finally became enthusiastic.

We were unfortunate in 1910, expecting to winter three colonies. On moving them to the cellar, however, we found that two had decamped, root and branch, leaving only beeless hives with honey in them. So in the spring of 1911 we started again with a single colony. I purchased Mrs. Comstock's admirable book, and we also secured the A B C and X Y Z of Bee Culture. By and by, as a Christmas gift I gave my husband "Langstroth on the Honeybee." We purchased an Italian queen, and made a new colony from a nucleus. Ere long we

had a fine colony of Italians, and from them got a queen by which we Italianized the second colony. Meanwhile the second colony swarmed, and we had a third colony (blacks). We had 85 lbs. of surplus honey from our bees in 1911—practically from one colony, all the others being youngsters. These three colonies were wintered in our cellar, and were in fine condition last spring.

My husband took a short course in apiculture at the Ontario Agricultural College, Guelph, last January; visited the Brantford bee-supply factory with the other students, and left a fair-sized order for hives, foundation, excluders, etc., with the firm. On his return home he was saturated with bee lore.

Last June we purchased another Italian queen, and in September a third. Our three colonies have increased to six, all flourishing and strong.

We are now glad that we took heart and kept on trying. We find great pleasure in more ways than one. The honey is a good addition to our table, and we sell all we do not use.

Last summer the bees insisted on swarming, or otherwise demanding attention on three successive wash-days. My appreciation of their demands for attention was much below par. However, the swarms were little trouble to secure, as in each case we had clipped her majesty's wings, and so prevented her from flying off with her retinue. She had to content herself with walking on a white dress laid in front of the hive, where we quickly espied her, and carefully placed her in the new hive. In a very short time every bee found out that the sovereign was holding a levee, and went to pay its respects to her.

The only objection I have to bees is the sting. They and I have frequently disagreed about that, and sometimes I got the best of the argument, though more frequently *they* came off victorious. If they were of a less aggressive and inquisitive turn of mind it would be more pleasant; but they are "mixed mercies," so we need not grumble. At first I thought I should never handle the little creatures, but one becomes accustomed to bad usage, so now I accept the stings as meekly as possible. The worst sting I ever got was when hunting for a queen. While peering into the hive the tip of my nose was suddenly attacked. Now, that is a decidedly vulnerable point, and the tears coursed down my cheeks so heavily that I had to retire, for I could not see. They say that stings cure rheumatism. I do not know whether that is true or not; but this I can aver: For some years I suf-



ferred very much from rheumatism; and since we began keeping bees all my rheumatic pains have vanished except in one finger. Did the stings have any thing to do with this?

We read every bee item we see, and I am learning right along. My husband knows far more about bees than I do; but, of course, a man can not get on without his wife. For instance, one day he rushed into the kitchen, wildly pawing the air, and performing a sort of war-dance, very much unlike his usual quiet behavior, and all because a little bee stung him on the nose! He implored me to help him off with his veil, and an unholy joy filled my heart at the scene, for I remembered how he scoffed when I fled with a sting in *my* nose. It all depends on whose nose the bees attack; and it's quite a different matter when it's your own. But we do not trouble much about stings after all—just grin and bear them.

I am not exactly a beekeeper as yet. I am only a beekeeper's assistant. But there is no reason why I too should not go on and do as well as others.

O'Connell, Ontario, Canada, Sept. 30.

## THE SHAKEN-PLAN SWARM FOR WOMEN

BY MRS. GERTRUDE GILL

Women are becoming competitors of men in many branches of industry, and successfully too. Then why not in beekeeping? A woman's work is bound to be more or less monotonous (I am speaking now of house-keeping), made up as it is of little tasks that, for the comfort of the family, must be repeated every day. That, together with the indoor atmosphere, often brings more or less nervous strain on the wife and mother. To most of us I believe there is a bond of kinship with Mother Nature; and a little while each day in God's beautiful out-of-doors means new life to tired nerves; and what better or more profitable way to bring this about than to make a study of bees?

The fear of stings keeps many women away from the apiary; but in most cases this fear can be overcome with an increasing knowledge of the natural instincts of these little workers.

Eighteen years ago I came with my husband to Colorado, that Mecca of sunshine and pure air suggested by many physicians for stubborn cases that refuse to yield to pills and powders. In order to be out of doors I began helping him in the apiary; and with his patient teaching and the fascination there is in working with the little busy bee my natural timidity was soon overcome; and with returning health there seem-

ed to open to me a new vista in life I had never before thought of.

If I were to advise younger women just entering the work I should suggest that, to start right, is perhaps the first essential to success in beekeeping, for I believe the time is past for any one with any old method to succeed in apiculture. There are more difficulties to contend with—hard winters, poor seasons, overstocking, and disease; and one must make a study of his own situation, giving his bees careful attention.

I believe in beekeeping for women; but I don't take to the "dishpan and sheet" theory. I should like to tell how we manage this trying part of beekeeping—the swarming season—for I don't take kindly to climbing trees, jumping over ditches, getting through wire fences, and the many athletic feats necessary to catch a swarm that may, after all, object to being caught. Now for this method that, I presume, has grown threadbare to our male readers, but may still be new to the women folks.

First, we will take it for granted that the hive has movable combs, and the condition such that bees would cast a swarm anyhow. Using a little smoke at the entrance, gently remove the cover so as not to disturb the bees more than necessary. Take out the follower; or if there is none, the outside comb; gently loosen the frames with a hive tool, giving plenty of space to lift the combs without crushing the bees. During the swarming season it would be well to begin with the side combs, looking over each one carefully. After locating the queen, set this comb, with the queen and bees on it, at one side, in the shade if the weather is very hot. If you have no helper, lift the hive back from the stand, placing the new hive (which should be prepared beforehand with foundation starters, or sheets, if preferred) on the stand where the old one has just been removed. Level it carefully, thus producing straight combs. Then take the comb having the queen, which should contain eggs or larvæ. Make room in the new hive by removing one frame with starter. Hang this comb with the queen in the center of the new hive, first making sure that all queen-cells have been cut out. Shake the bees from the four center combs of the old colony (not too close, as you will need the young bees to protect the brood left. After putting the frame with foundation at one side of the brood carry the old hive away to the new location. The shaken colony on the old stand will catch the working force.

Hang up the dishpan and sheet. You will not need them. The bees have swarmed just as well as if they did so naturally, and

you are in a better temper than with the old way of letting the bees have their own way, and the whole apiary has not been disturbed with that feverish unrest that is sometimes the case where swarms are in the air all day. Hyrum, Utah.

[The writer of the above would be better known to our readers, perhaps, if she had signed herself, "Mrs. M. A. Gill." Her practical suggestions show that she is no longer an amateur.—ED.]

### KEEPING BEES FOR PROFIT

BY RUTH C. GIFFORD

I took up beekeeping because I could make some money, and at the same time be at home. My bees averaged about 100 sections per colony last year. The best colony made 146 sections; and the poorest, my only pure Italian colony, 57.

Most of my honey is sold locally—that is, to consumers within a radius of two miles, and by the case to country and town stores for ten miles around. The remainder is sold to a dairy-product store in a city near by. The price is 20 cents a section for fancy and No. 1. I have very little of any other kind, for honey is just as easy to take off at the proper time as it is after it is travel-stained.

I have no wheelbarrow for carrying hives and supers; but I did have a stout express wagon left over from "kid days." I took the sides off and nailed two half-inch cleats lengthwise on the edges of the bottom. These parallel strips are always in position; and, being half an inch higher than the bottom, they prevent bees from being mashed. Lately, though, when interchanging supers I take them off and set them on their sides across the wagon. In this way, after the supers are set off the hive they are parallel to each other, and two or three inches apart. Then they can be replaced in any order desired, and without extra lifting. If a super is full of foundation on which the bees have just started to work I set it on end on the wagon, because the thin combs and foundation would bend under the weight of the bees if the super were placed on its side, and the result would be a lot of sections stuck to the division-boards.

I use the eight-frame hive. If I want to move one when it is full of honey I take out three or four frames, carry the hive and remaining combs to the desired place, then get the frames which were set out, and replace them in the hive. If the distance is longer I take out part of the frames, set the hive on the wagon, and set them in it

again. When the new location is reached, I again take out part of the frames, set the hive on the stand, and then replace the frames.

North East, Ind.

### AN ARMOR FOR THE TIMID SISTERS

BY MRS. E. R. WILSON

I am very fond of honey or I never would have been interested in bees. But when we started with one colony, and I experienced the first stings, my ardor cooled somewhat, for those stings really did poison me. After one summer, however, I began to contract the bee fever, and have had it ever since. I now work with the bees at all times.

The feminine beekeeper should never trust even the most gentle colony, but should always dress so that being stung severely will be an impossibility. The following is a very safe suit for the use of women in the apiary: Long bicycle boots, reaching to the knee, or buttoned leggings; a pair of long bloomers to fasten below the knee with an inch-wide elastic band, and a band of elastic to hold them in place at the waist; a waist to slip on over the head, made long at the bottom, so as to pass under the elastic band of the bloomers; and a bee-veil sewed to the neck of the waist, and finished with a narrow elastic at the top in order to snap around the hat-crown. A short lightweight skirt and long elbow bee-gloves complete the equipment. A bee must be very smart to do much harm to one in such armor.

When one feels safe the interest is double what it is when fear is the main thought.

I assist my husband in caring for the bees by using the smoker, and he says that I make an excellent helper. When he is away I take all the care of the apiary. The work is hard at times, but not harder than some parts of housework. There certainly is more pleasure and variety in it, for the bees surely keep one guessing.

I would advise women who are beginners to keep only one colony at first, for "chunk" or extracted honey the first season. Section honey is good, and is more suggestive of a woman's work, but is really harder to handle, and it is more difficult to secure results. The bees swarm worse, and this should be avoided by any beginner.

Plenty of room should always be given. Shallow supers are best for a woman to handle, and are pretty enough, when well filled, to please any one.

Last, but not least, clip the queen's wings. Men may not need to; but women certainly do, especially if slightly timid.

Tony, Wis.





Mrs. E. L. Swope demonstrating bees at the Puyallup Fair, Washington.

## APICULTURE AS AN OCCUPATION FOR WOMEN

BY MRS. E. L. SWOPE

The reasons for keeping bees are many and various, and the business appeals to man, woman, youth, and child. Bees have been a part of the conscious life of man from the beginning. Not only have they sweetened his daily bread with beneficent honey, but they have also set him an example far more uplifting than any other insect or animal creation.

Beekeeping is the one line of work that the busy woman or the woman of leisure can take up as a remunerative occupation. All beginners should be provided with a silk bee-veil and rubber gloves, because bees do not often attack rubber. They should also visit the bees often and keep up the acquaintance, but should not approach the front of the hive. Always approach a hive from the side or back. When thus protected by veil and gloves any one can handle bees without being stung. However, most people become immune to the poison after

being stung a few times. When bee management has been properly learned bees are as easily handled as birds. Women can care for bees because there is little attention necessary unless one wishes to feed for early brood-rearing, or there is foul brood in the vicinity.

When the swarming season is at hand, and one is provided with a new sectional hive with frames properly fitted with brood-foundation starters, and an Alley queen and drone trap, the bees may be allowed to cluster in the trap or they may be left free to cluster elsewhere. If they cluster on a bush, cut the branch and lay it before the hive, preferably on a large sheet of cheap muslin. Then tap lightly with a stick, and you will soon experience a thrill of enthusiasm. The bees will march into the hive in regular order.

Women who keep bees are of great benefit to their homes and communities. The honey supplied is the most healthful and purest sweet the world knows, and is useful in a variety of ways. It may be used in its natural state on the table, in fruit-canning,



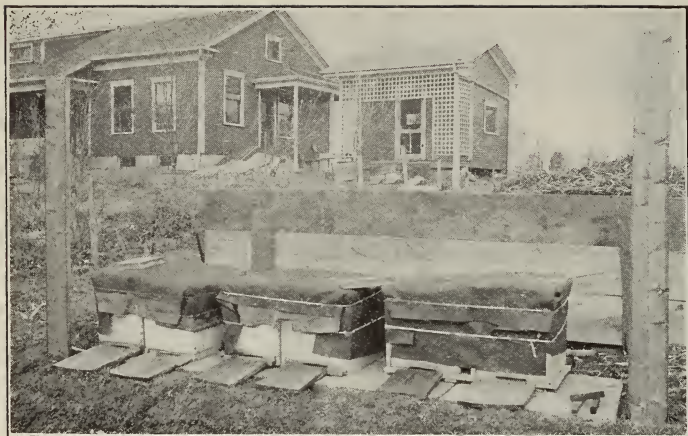


FIG. 1.—Dr. Edna P. Matthews' plan of locating colonies on long concrete foundations.

cooking, baking, and candy-making—in fact, in any thing that sugar and water are used in. It has greater sweetening power than most of the manufactured syrups, and, besides, possesses great medicinal value.

As a remunerative occupation for women it has been my experience that it is extremely profitable, clean, and healthful. When bees have been properly cared for during the winter and spring, and a proper method employed during the summer, a single swarm can produce from 50 to 200 one-pound sections of surplus honey which can always be sold at good prices. It is a business that can be carried on with one or two hives or one or two hundred. It can be carried on at home, thus affording a great opportunity for self-improvement. There should be at least one or two hives of bees in every garden, especially in the rural sections of our country, as the bee is the best

in sickness, gives me the foundation for the above arbitrary statement. Her long years of training in household detail, her quick perception, enthusiasm, and versatility, all combine to make her an ideal beekeeper. Often longing for the real things of life and their doing, it is a blessing to her if she can pick up an avocation that is pleasing, healthful, and remunerative, thus segregating herself from idleness and frivolity.

"Cottage Garden" is a two-acre fruit and flower farm developed out of a forsaken, barren, suburban knoll composed mostly of subsoil. We took up a proposition of this kind because of a breakdown under a tremendous strain. (Note the willingness of one doctor to take his own medicine!) Our plan, originally, was to put out choice fruits and vegetables for the use of our family, selling the surplus. We wanted a

large planting of fine peonies, a large vineyard of fancy table grapes, and we also wanted bulbs and shrubbery blooming for Memorial day. Our income was standardized at \$500 a year, and the labor at five hours a day; but we found that these could not be kept uniform, as some crops failed on account of conditions beyond our control, and some required twenty-four hours' labor a day. For instance we cut and mar-

pollenizer, and perfect pollenization means perfect fruit and grain.

Buckley, Wash.

## HOW A WOMAN FOUND RECREATION WITH BEES, FRUIT, AND FLOWERS

BY DR. EDNA P. MATTHEWS.

A woman is mentally and physically qualified for bee culture. Twenty-five years of intimate study of women, both in health and

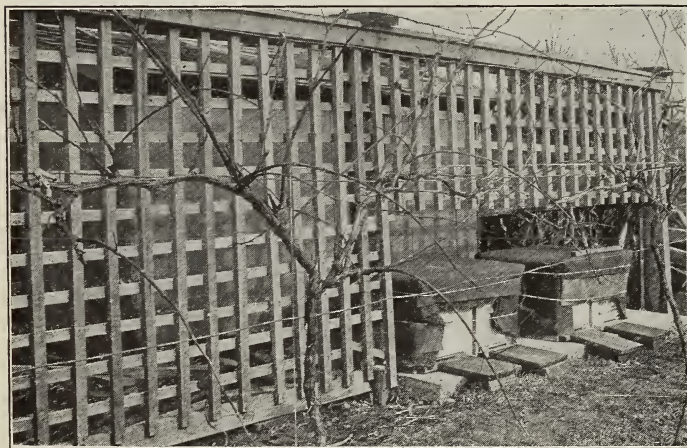


FIG. 2.—Latticed grapevines for shade.



FIG. 3.—Winter cases made of barn-siding, which are used in the summer for chicken-coops.

keted 600 dozen peony blossoms and a wagonload of other blossoms in seventy-two hours before Decoration day. Bees were added to pad up this income by providing an alternate. We found the honey crop fluctuated too, as we have only one main pasture in this location, that being white

clover. However, when all crops are good our beloved recreation becomes a very strenuous occupation.

The apiary consists of from twenty-five to fifty stands. We like about thirty. It is essentially a home apiary, and is conducted as such—always in harmony with its sur-



FIG. 4.—Interior of a model shop, showing method of cleaning fixtures.



roundings. The colonies are located about the place in groups convenient for operation and for observation in passing to and fro. One long line extends toward the barn and poultry-yard where duty takes us many times each forenoon. Most of the colonies are located on cement walks, built for the purpose, thirty inches wide, with a slope of one inch toward the south, and shaded by lattice work and grapevines. These cement foundations are spider, toad, and mouse proof, and easily cleaned, and they add to the durability of the hives.

The colonies are usually wintered right on these walks by being moved together in pairs, and packed with cushions of lawn clippings in the supers, which are supported away from the top-bars by pieces of the angle strips taken from the corners of hives as they come from the factory. Over the covers of the hive are first placed pads of wool carpet, and then the felt roofing paper. We also use some winter cases as in Fig. 3, made from barn siding. These have drop fronts and adjustable floors, and are used for chicken-coops in the summer.

The shop was built to conform to the other buildings on the place, and is suitable

for the work to be done in it. The lattice work in front of the porch is cut out enough to allow loaded supers as well as fixtured ones to be stacked up when they are being moved out and in. The room is lighted by electricity, and is fitted with every device for facilitating the work. The cleaning operations extend to every article connected with the bees. All of this work must be done early in the winter, as the pruning, spraying, carpentering work, cement work, etc., must be done later. We first empty all the hives and supers that have to be cleaned; and after repairing and painting them we stack them along the wall ready for the inside fixtures. We use an original device for cleaning fences and holders. The plan is to tack two sheets of No. 3 sandpaper on the edge of the fence, and then with half a sheet to cover a 2 x 4 x 12-inch block which is held in place on the bench by cleats, as shown in Fig. 4. Every part of the fences and holders, such as sides, uprights, etc., may be brought rapidly over the sandpaper and made as good as new or better. All parts needing repairing are laid on a pile and attended to later.

Our tools for repairing are very simple—a couple of plated table-knives cut off square, a tack-puller made from an old file, a pair of small pliers, trays of nails, and a fine saw.

As soon as our twelve-foot bench is full of clean fixtures they are packed away in the supers awaiting the sections later on. We do all this work with the shop unheated, the temperature being about 32 degrees F.

When we get ready to clean the frames, if they are very much soiled we put them in a kettle of Lewis lye, using two pounds to eight gallons of hot water. After a few minutes in the lye we fork them into a tub of water in which four pounds of salt has been dissolved.

For fastening foundation in sections we use a Lewis foundation-fastener, and throw the completed sections on a table having a fence around the top to hold them. For this work and for all bench work, as well as for work with the bees, a pair of spectacles with a 24-inch focus are essential for the use of middle-aged persons.

#### CLOTHING FOR THE APIARY.

The bee-woman, on approach of spring, will get her clothing ready for work. A short skirt should be worn, clearing the shoe-tops, and wide enough to give free motion. This should be made of brown denim. The shirt-waist should have three buttons at the waist-line on the back to hold the skirt securely. Brown hose, ribbed for neatness, are best. (Boys' hose are more



The basket shown is a regular market basket with part of a barrel-hoop nailed on for a handle. A short cord with a hook on one end is tied on as shown. I have used such a basket for years to shake swarms into. The basket is hung to a limb; and when the bees cluster they can be carried anywhere you wish.  
—A. P. LAWRENCE, Delton, Mich.





Mrs. S. E. Howard, Wakefield, Mass., showing that full supers are not too heavy for a woman to lift.

serviceable.) The shoes should be low-heeled and comfortable. A close-fitting jacket made from denim with an easy standing collar, hooked at the throat, a soft hat, and some bee-veils from black netting, complete the outfit.

#### SOFT CANDY FOR SPRING FEEDING.

In the spring, if feeding seems advisable we give fondant made by the same formula used for our children in the early years. This is made of a pound of granulated sugar, four ounces of water, a pinch of cream of tartar, and a pinch of salt. The mixture is put in a covered pan, and boiled without stirring until it just spins a thread from the upheld spoon. It is then poured into a bowl on a firm table, and when it crinkles like hot milk it should be beaten vigorously. After it turns white it is poured into a paper pie-plate. After a few trials a perfectly smooth cream can be produced.

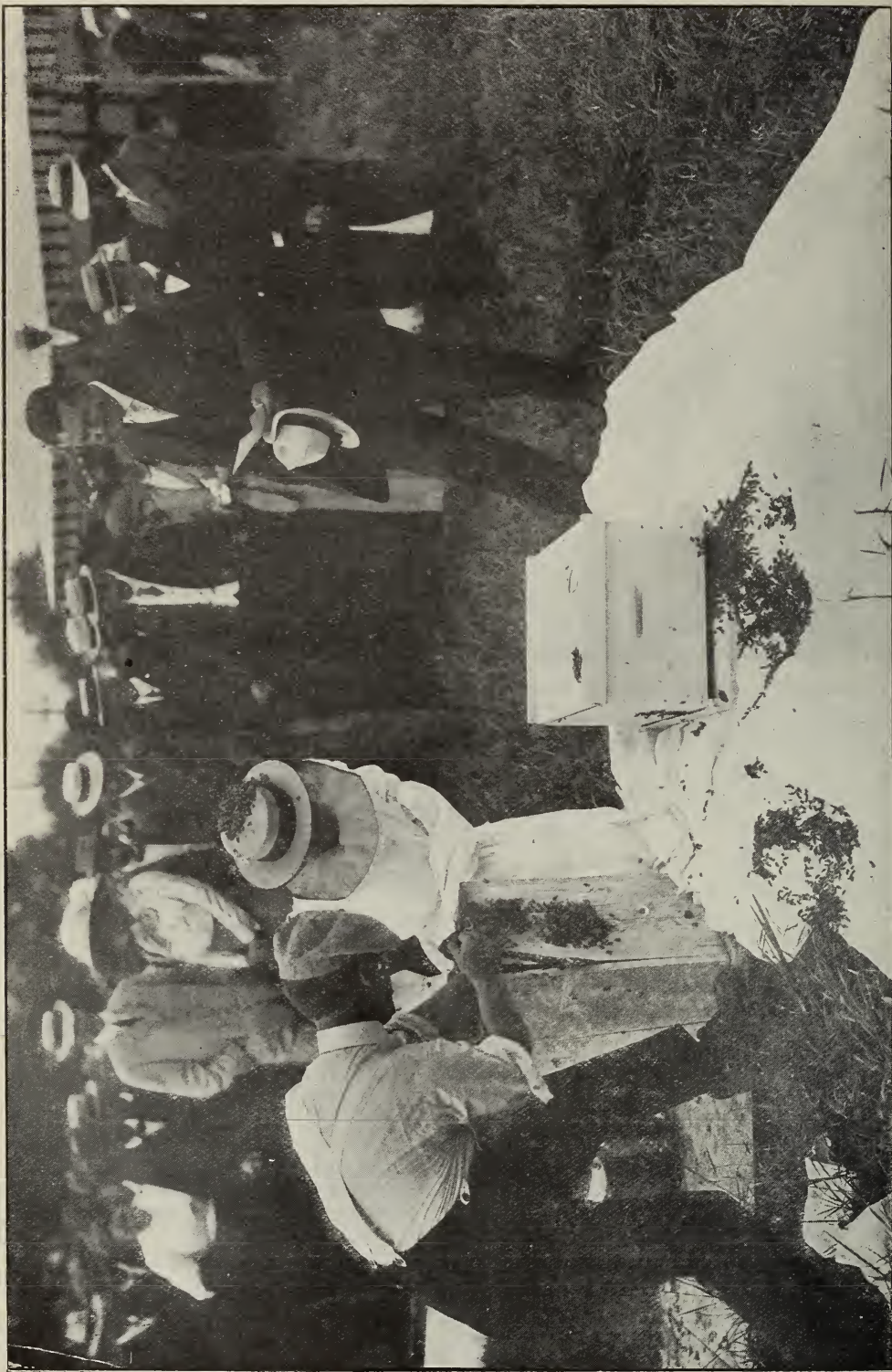
The explanation of the formation of this candy is that the first crystal stamps the mass. The coarse crystals form on the sides of the uncovered pan; and jarring, while cooling, will start coarse crystallization. The cream of tartar converts a small amount of cane sugar into glucose—quite enough to prevent coarse crystals forming. (Commercial glucose should never be used, as the

makers will not go to the trouble and expense to reneutralize all of the acids used in the conversion of the starch.)

Gradually the colonies are prepared for supers. The top-bars are scraped clean, bulged combs are cut down to the proper thickness, old queen-cells removed, bottom-bars cleaned—every thing being put in the best possible condition, while at the same time the colonies are getting used to being handled. We place three pieces of veneer, two inches wide, across the top-bars, preventing the bees from plastering the section-holders fast to them. We allow the bees to store the miscellaneous flow of the early spring in the brood-chamber.

We have very few swarms during a good honey-flow. The ground slopes to the south, and the avenue is planted with catalpa trees; and, having no high trees about, our swarms rarely leave the place. Last year there were eight that swarmed in succession on the same grapevine.

All finished honey is carefully scraped, and packed in cases. The honey that is produced in shallow extracting-frames is cut out and put in buckets, and sold as bulk comb honey, for which there is quite a demand. Our market is local, most of the sales being made by telephone, although



Prying open the old box hive after most of the bees have been drummed up into a box and dumped on the sheet in front of the new hive.





Transferring not impossible for women to undertake. Brushing the few remaining bees from the combs in the old box-hive.

many of the orders stand from year to year, running all the way from ten to fifty sections. We sell direct to the consumer at a good price, rarely taking less than 25 cents a section.

Dayton, Ohio.

### A WOMAN'S WORK

BY MRS. S. E. HOWARD

[To the writer of this article has been accorded the title of "Bee Expert," as she is an authority on bee management from queen-rearing to honey-production. She is a member of the Massachusetts Society of Beekeepers, and also of the National Beekeepers' Association, and is an active worker, writer, and student. Mrs. Howard's success is due in a large measure to the increasing interest in bees in Massachusetts, and her influence has reached distant parts of the country from magazine articles (*McCall's*, *Country Life*, *Suburban Life*, *Country Gentleman*) recounting her experiences and methods. Her yards at Hill Crest, Wakefield, Mass., are models of neatness, and received the commendation of the Massachusetts Society of Beekeepers, which society she entertained August 3, 1912.—ED.]

I first became interested in bees through the gift of a colony in an old soap-box, nailed top and bottom, with a one-inch round hole at the bottom as an entrance. This I had removed to my back yard, and watched it (at a distance) for a season, and

hoped for a swarm to put into a new Langstroth hive with full sheets of foundation which I had provided for the "anticipated," which did not happen that season. During that first summer I watched, talked, and questioned, and read my *A B C of Beekeeping*, and thought I had the theoretical knowledge, but I lacked the courage to do the practical, which was to transfer that colony to a new hive. Fall came, and no provision made for surplus honey, and none was obtained, but the bees went into winter quarters with abundant stores, and were well protected. The winter months were used for more reading, and planning for the "spring moving" of the bees to their new tenement for which they afterward paid ample rent.

Looking forward to the plum and cherry bloom was a pleasant anticipation, as courage and determination had increased. The propitious day arrived: fruit-bloom, balmy air, and bees at work, and happy, with all conditions favorable. With my veil adjusted, smoker lighted, and hammer, chisel, and living-box ready, I proceeded as per directions. With the assistance of my husband (some help is needed by a woman) the en-





A typical "bee mistress" of the Cotswold Hills, England. The old picturesque straw skeps are rapidly disappearing, giving place to more practical modern equipment.

trance to the old hive was closed with a piece of wire screen, and then placed bottom side up, a few feet away from the old stand which was now supplied with a new hive with full sheets of foundation. I then gave the bees a few puffs of smoke and a vigorous drumming on the sides of the old box. After a few minutes' intermission to allow bees to fill up with honey, the bottom of the old hive was removed and the swarm-box placed over it, and bees rushed up into it. Taking it off was a revelation, five hundred or more queens appearing, which afterward proved to be drones not yet ready to fly.

The few steps to the old stand took but a moment, and the bees were shaken on to the frames of foundation, and the cover replaced. Back again for another "boxful," and also the queen if not in the first lot. I carried lot No. 2 to new hive and shook on to a sheet spread on the grass in front of the entrance, and watched for the "lady," whom, I then realized, I had not yet seen.

Soon the orderly marching of the bees in one general direction and into the hive convinced me of my success, and the work was complete; I was victor and I felt I could

do any thing with bees so high was my elation.

I have since had many perplexities, and have yet much to learn; indeed, the possibilities and wonders increase as I progress.

The result for that season was 60 lbs. of honey without a swarm from the hive which we named "Original, No. 1." The next year I divided and made nuclei and called them "Original, No. 2 and 3."

In my beginning I had descriptive names for colonies, given by circumstances and peculiarities, or they took the name of the party I obtained bees from, such as Smith, Wilkins, Daniel's hive, etc.

The accidental removal of the tip of a leg in clipping a queen's wing gave me "Clubfoot," which I especially valued, as she was wonderfully prolific, and bees were industrious, and were the show colony of the place.

From this beginning has been evolved Hill Crest apiary with an average of 50 colonies, and also plans for outyards and a queen-mating yard—all this from my back-yard venture. Hill Crest comprises three acres of fine land upon which I have had erected a double bungalow with piazzas

36 by 6. This is considered as a fruit-farm investment and a summer home, and is not charged up to the bees; in fact, I feel that they earn their rent by services rendered in fertilization of flowers, of small fruit and vegetables, shown by the increased crops.

As in farming, an accurate estimate or system of accounting is quite difficult, as present expenditures may not mature for years, as in apple-tree planting. As a fair estimate I place the income from a hive at \$15.00; yet I know that my own income is greater if I reckon the income from all sources, such as lecture work and writing and teaching, all of which the bee work fits and enables me to do.

My honey is in great local demand, and I am able to obtain five cents advance over the market price—thirty cents for comb and 45 cts. for a pint of extracted, all of which is put up and labeled as of finest quality.

My apiary is on a road much traveled by automobiles and on a car line, and I have a constantly increasing trade with autoists. The sale often reaches four or five boxes or jars to a party.

I have demonstrated that honey can be sold from house to house by a personal canvass, but have not had to practice it for the last two seasons.

Much of the yard manipulation I can accomplish alone, except for a little help in the rush season, and at such times I am able to get a school boy or a volunteer pupil who offers for the experience. Lifting can often be overcome by the use of a light box of 1/4-inch stock built on Langstroth dimensions, this to receive part of the frames of the hive to be lifted, removed, or manipulated. My wheelbarrow is an invaluable aid to and from the yard, and as a stand in the yard to hold hive, tools, etc.

Little difficulty is experienced in hiving swarms, and I have been fortunate in keeping down swarming to a reasonable degree.

My approximate yard investment including bees, hives, and accessories, is about \$800—this from a \$25 start six years ago. I also carry about \$200 in new goods for sale to pupils and near-by beekeepers, and to draw from for my own use.

I found that work must be anticipated, and the right thing done at the right time; also that bees will exist under the most adverse conditions, but appreciate and respond to any attention to their betterment. I have also learned that one style of hive should be used exclusively, and I have settled down to the ten-frame dovetailed with Hoffman staple-spaced frames.

I regard beekeeping as the ideal work for women, and it has opened up new fields and

opportunities to me socially and financially, and also a deeper perception of nature's ways.

Wakefield, Mass.

## BEEKEEPING ON THE COTSWOLD HILLS

BY A. H. BOWEN

Last season, now happily over, was one of the worst in this district for some years. To the large apiarist the summer was a nightmare, as the weather from the first of June to the end of August was atrocious, and, with the exception of one fine week in July, honey-gathering was almost an impossibility. The sudden and heavy downpours in June drowned most of the foraging bees which should have been collecting honey during the few hot days which followed, so that the colonies which stored surplus were few and far between.

After a rather severe winter, bees on the whole came through in good form; and with the help of a little feeding they built up rapidly, the spring being unusually mild and favorable.

Around the "Garden Town," fruit-trees blossomed almost a month earlier than usual; and so forward was the season that, at the beginning of May, strong colonies were working hard in the supers. No rain fell for practically eight weeks, during which time the merry hum of the bees was heard from morn till night, taking every advantage of Nature's prodigality.

As a swarming season, 1912 will be remembered by many, especially by the straw-skep beekeepers, who averaged three to six swarms per hive. The first came out during the last week of April; and from thence until August there was a succession of swarms, the last being about the size of a duck's egg.

Those fortunate ones who made a practice of selling the swarms at \$3.00 each reaped a rich harvest.

Runaway swarms have been another feature of this changeable season. In some cases they rushed out without any warning, and flew straight away into some distant tower or oak tree; in others, they clustered a few minutes, and then decamped. I myself lost four swarms which flew away; but one from an adjoining apiary came and took possession of an empty "decoy" hive, several of which I keep in each apiary, and built up into a good colony.

Foul brood has been unusually rampant this season; and with hives packed with brood it spread in an alarming manner. However, by shaking all the worst colonies,



and treating the remainder with a new remedy, I have been able to keep this disease in check. If there is any thing which tends to propagate foul brood it is, in my opinion, a wet and cold summer, when but little honey is being gathered. Under these conditions the bees seem to lose both heart and energy, and the disease spreads like wildfire through the whole apiary unless preventive measures are taken.

During the latter part of the season robbers were exceedingly troublesome, especially when removing supers. The robbing tendency was indeed so bad that most of the work accomplished had to be carried out in the evening, when flying had ceased for the day. The honey was extracted at night by the aid of a powerful lamp, thus avoiding any excitement in the apiary. At the last extracting I found it a good plan to stack up all the supers of wet combs until the bees had been fed up. They were then placed on the strongest hives to be cleaned out. From the best colony I took 50 lbs. of run honey, but the average yield was only about 10 lbs. per hive, while another apiarist with nearly 200 stocks did not harvest more than half a ton of honey.

Owing to the shortage, honey has been in good demand, though the price is not much higher than last season; and until the public ceases to treat honey as a luxury rather than a necessity the price in a poor year can not be advanced much without injuring the sale. The wholesale price in 1-lb. screw-top bottles ranges from \$1.92 to \$2.16 per dozen, according to quality, and sells retail at 10½ to 24 cts. per jar.

#### FEEDING SOFT CANDY.

My 80 colonies in ten-frame hives in September were found so destitute of stores that it took 500 lbs. of sugar boiled to syrup to feed them up. The feeders I use are lever-lid cans with about twenty small holes pierced in the lid. Owing to the chilly weather some refused to take down sufficient syrup, and to these were given a large cake of soft and "buttery" candy. This is made by bringing a quart of water to the boil, and adding 12 pounds of refined cane sugar, a teaspoonful of cream of tartar and a little salt. Allow it to simmer for ten minutes, remove it from the fire and stir until it begins to thicken, when it is poured into molds. This candy is beautifully smooth and soft; and as it will keep in this condition for months it is excellent for use in queen-cages.

For a serviceable hive-cover I use a flat telescopic roof with a three-inch rim covered with painted galvanized iron. This, I

consider, makes the finest covering, and it lasts a lifetime.

#### A COTSWOLD "BEE MISTRESS."

In the accompanying photographs a good idea may be obtained of a typical Cotswold bee-mistress, with her quaint cottage and row of skeps standing in a sheltered corner of the garden. The hand of time has fallen heavily upon the poor old bee-skep, and in a few years hence this picturesque home will have entirely disappeared from our old-world villages.

Cheltenham, England.

#### A WOMAN WHO HAS BEEN A BEEKEEPER NEARLY FORTY YEARS

BY MRS. ELLA STACKMAN

I am 61 years of age, and for over 39 years I have been engaged more or less in work with the bees or in the workshop, and sometimes with both. I began with four colonies of black bees in the old American hive. I purchased them of a neighbor who was so badly stung by them as to fear to have more experience with them. My husband gave reluctant consent to my having them, with the understanding that I should have the sole care of them, and that he should never be expected to have any thing to do with them; and I well remember how happy I was when they were ranged on a plank behind the house, and I became the proud possessor of them. With what delight I raised the cover which was over a pane of glass at the back of the hives, and looked into their little home, and how fervently I wished that there were some way that I could learn all about them!

A short time afterward I found a stray leaf of GLEANINGS among some waste paper. How eagerly I read and reread it! I sent for GLEANINGS and the A B C book, and began to learn something of the habits of bees. My husband, seeing the magazines and books lying about, soon picked them up and became interested, and, like the male sex in general, assumed with my free consent and approval the leading part in the business. So I shall say that we both began to think that we needed a better hive, and the combs built in frames.

We sent for samples of hives, and finally adopted the Langstroth. We have never regretted our choice, and I still think it the best ever. We chose the Hoffman L. frame and the Miller wide frame for holding eight 4¼ x 4¼ x 1⅞ section boxes.

My better half became more interested in a herd of fine Jerseys twelve years ago, when we left our village home, and moved to the farm. He then turned over what bees



we had at that time (20 colonies) to my sole care, and since then I have been engaged in supplying a few drug firms with bee poison in various forms, and raising honey as a side issue merely, as I have become, during these years, almost immuné to the effects of stings.

I have never cut out a hive, but have done about every thing that was ever done with or for a bee. I nailed about all the hive frames and boxes; put foundation in boxes and frames; helped look over our apiary of about 100 to 200 colonies, about once in ten days, during the summer season; assisted in queen-rearing, selling, and shipping full colonies, nuclei, and pounds of bees; uncapped, extracted sometimes when necessary, and every thing else that could be done by a woman.

We exhibited for several years at our State fair, and took the first prize one year for the largest and best exhibit of comb honey ever placed in the building—1400 lbs., all in 1-lb. sections, and good enough to be classed No. 1 or "Fancy."

I sell at my door what honey I raise, and always enjoy very much a good talk with a brother or sister beekeeper. My husband complains sometimes that I enthuse people too much when I talk bees to them, which, perhaps, is true; but my happiest hours have been spent among them.

Auburn, Me., Aug. 22.

## DETERMINATION HALF THE BATTLE IN BEE-KEEPING

BY ALICE TRIPP

I came to this country from Wales at an early age, with four older brothers and five sisters in the 70's. I had never eaten honey, nor had I ever seen a hive in my native country. In fact, I was in America several years before I saw a hive. But my brothers cut down countless trees that contained large quantities of honey, sometimes enough to fill a tub. While I liked to eat the honey I was always sorry that the industrious little workers had to be killed in order that we might get the honey.

I was delighted, when learning about the use of hives, to find that the surplus honey could be taken off for family use while the bees stored plenty in the bottom story for their own needs.

I resolved that, if I ever had a home of my own, I would own some hives full of bees.

But, alas! my better half could not be persuaded nor coaxed to let me keep bees. All is well that ends well, however.

One day when my husband was sick in bed I spied a new and strange-looking lump hanging from the limb of a tree across the road. Upon investigation I found it to be a swarm of bees. In a very few minutes I had fixed a box with cross-bars in the center. I mixed up some sugar and water, and wet the cross-bars and part of the inside of the box. I set the box on the ground, and spread out a sheet in front of it. I backed the buggy under the limb, and with a hand-saw cut off the limb and soon climbed out of the buggy with my prize. I placed the treasure gently on the sheet, close to the box. In less than two minutes the bees with the queen in the center were making a bee line for that box.

That was five years ago. I still have my box of bees. They are so docile that I don't try to make them produce much surplus honey, but use them for increase.

I now own 20 hives with movable frames. Although only nine are occupied, I hope to have all full before 1914. I also have three home-made hives containing bees, making 12 colonies at the beginning of 1913. I have had the misfortune to lose one colony nearly every winter.

I once noticed a query as to how a woman manages the heavy lifting. I admit that a ten-frame hive full of honey is all I want to tackle. I first pry the upper story very slowly with two screwdrivers (having nothing better): plant my feet in a good position, take a firm hold and a good breath and determine that I *can* lift it, and I always succeed. There is a good deal in thinking you *can* and *will*.

I extracted over nine gallons of honey from one colony in 1912. That was my best colony. Some came through the winter in poor condition. I don't make the same mistake twice, for I am in the business to stay.

Colo, Iowa.

## SUITABLE COSTUME FOR HIVING A SWARM OF BEES

BY MRS. G. W. PERSONS

Last summer I hived a swarm of bees. It was a little after-swarm—about a quart of bees, I think, that came out in July. It hung on the limb of an almond tree all night; and the next morning, as my husband was going to an out-apiary he asked me to hive it about ten o'clock.

I first got a hive and put three frames containing full sheets of foundation and a division-board in it. This I set in a convenient place. By standing on a box and reaching up as high as I could I finally

managed to cut off the limb on which the bees were clustered. This I carried very carefully to the prepared hive; and with one or two quick vigorous shakes I got the bees on the ground at the entrance of the hive. Picking up a pebble I drummed on top of the hive, and soon all the bees were moving in a flock toward the entrance.

I watched them, drumming the while, until I saw the queen go in. I was fully rewarded for my trouble when I saw her, for she was a beautiful yellow virgin. Then, placing a raisin-tray against the hive to protect it from the hot sun, I left it. About five days later the queen was laying, then the hive was moved on a stand with other hives.

Before the season ended they had built themselves up into ten frames, and had filled an extracting-super with alfalfa honey.

When a woman thinks of bees, the utter unfitness of her clothing for the work is the first thing that occurs to her, and justly too, for low shoes and a flapping skirt seem to invite attack. I know whereof I speak. One experience in such clothes is enough. My bee-suit consists of a gymnasium suit with skirt, leggings, veil, and gloves. If I expect to be out in the apiary for only a short time I find that, instead of leggings, an extra pair of stockings with the feet cut off works well.

I bought a pattern and some khaki, and made the suit myself. I made the veil of khaki and wire cloth by taking a piece of the wire cloth 11 by 27 inches, and making a cylinder of it. Over one end and down the back was sewed a piece of khaki. The khaki over the back was for protection from the sun. At the lower edge of the cylinder was sewed a khaki skirt about eleven inches deep. The skirt was tucked inside my collar, and the bees were very effectually kept out. I wear gloves only when the bees are very cross. I find I can work much faster without them, and what do a few stings amount to, any way?

College City, California.

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## A WOMAN WHO KEEPS BEES BECAUSE SHE LIKES THEM

BY MRS. C. A. SIBLEY

If I had ever seen a honeybee previous to 1900 I did not know what it was. We moved here from Boston that year, and one day some one said that there was a swarm of bees down the road. So we went to see them. There was only one beekeeper in the neighborhood, and we sent him no word,

so the swarm hung there and dwindled just because we didn't know any better. But I talked about the "poor little things" until I was compelled to stop by remarks about "a bee in her bonnet," and "a vacuum under the bonnet."

There was some hay stacked in our meadow; and the next spring our beekeeper friend happening to meet me, he asked if he could buy the hay. When I mentioned his request to my husband he laughed and said, "As you have found a purchaser, complete the bargain and you may have whatever you get." Every one was amused when I exchanged it for a colony of bees. I still think I did not pay enough for those bees, for they have been worth a great deal to me. First, they gave me a new interest at a time when I was very homesick; also they have paid for our magazine and farm papers, for an incubator and brooder, and last fall they helped pay for the corn-harvester. We use an incredible amount of honey on our own table, and I do not know of any thing which so perfectly expresses friendship or sympathy under so many different circumstances as honey does. Our friends appreciate honey more than they do bees.

Of course there is some work that requires strength; but I manage the heavy lifting very easily. I let the men do it. They set the hives in and out of the cellar; but my daughter and I manage the swarms, which usually cluster on an apple tree. We carry out the kitchen table, then we carry out two chairs, a barrel (kept for the purpose), and the brooder-run. We put the table under the tree, the barrel on the table, the brooder-run on the barrel, and the hive on the brooder-run. We use the chairs ourselves, and climb from them to the table. Suppose some day we should put too much weight on the table-leaf and spill the edifice and its builders, and all because the queen's wings are not clipped. However, it is usually "a fine swarm," and is always put into a Danzenbaker hive. Of course, the hives come in the flat, and my son nails them together; and I am afraid he will have to until manufacturers list a hive body that can be put together with a needle and thread. I can't drive large nails very straight. My chickens run in the apiary, and never trouble the bees. Perhaps that is because the hives are set up a foot or more from the ground. Bushel crates make fine hive-stands in a pinch; but there is always a vigorous protest when the "men folks" see them. The hives are just high enough to work over easily. In June we put on the supers with full sheets of foundation. A piece of enamel cloth is placed



between the bees and the cover. One of us peels off the cloth, and the other slides on the super. We seldom use smoke for that; but we need it for removing bee-escapes. I asked Mr. Crane how he liked my smoker. He said he thought that kind was worth about ten cents a bushel. My suspicions are confirmed, and I shall have a new smoker.

Last season the honey-flow was poor in this locality. It was mainly from basswood. I secured a little more than 1000 salable sections from 31 colonies, fall count. There was no surplus from some of them. The local trade takes all my honey, and I could have sold much more. I am "fussy" about scraping, grading, and packing sections. Success in selling depends upon it.

Highgate, Vt.

### MISTAKES OF AN AMATEUR

BY MRS. S. L. DORSETT

As I am a beginner in beekeeping, and made several mistakes during the first year, I send you this article, hoping it will help some one to avoid making these same mistakes.

In the spring of 1911 I purchased (from a person going out of the bee business) an outfit consisting of ten eight-frame hives, and two common box hives. There were three colonies of hybrids in eight-frame hives and one colony of leather-colored Italians in another eight-frame hive. There were Italians in one of the box hives also. In the other box hive the bees were so vicious that I never got near enough to them to know what kind they were. The outfit—bees, hives, and all—was delivered on my premises when the snow was about ten inches deep; and, not having a place prepared for them, they were set in a corner of the garden.

BEES FLYING BEFORE HIVES WERE PLACED  
ON SUMMER STANDS.

About the 18th of March I had the box hives and the eight-frame hive of Italian bees placed where they were to stand all summer; but the hybrids were not moved until the last week in April. This I now look upon as a mistake, for the bees had been out enough to get their bearings, and kept going back to the place in the garden from which they had been moved, and sometimes the air seemed full of flying bees. I finally set a hive with empty frames at the place in the garden where the colonies had been, and at night there would be a nice cluster inside of the hive. About ten o'clock at night I would bring this hive and set it

over one of the four colonies with a queen-excluder under it, and next day I set another decoy hive in the garden, and at night brought that and the bees to another of the four colonies. I do not know whether I really helped the bees to find their homes or not; but at last there were no more bees flying aimlessly around in the garden. Two of these four colonies cast a swarm, and two stored nearly a superful of surplus honey.

#### QUEEN-CELLS NOT CUT OUT.

With my outfit there was one eight-frame hive of nice clean empty combs. Wishing to have the Italian bees build up strong I set this hive of empty combs on top of the eight-frame hive containing the colony of Italians in April, and on May 30 they cast a fine large swarm. Now, as I had not learned much about entrance-guards or cutting out queen-cells, I left the bees in the two-story hive, and in two weeks they had cast three after-swarms. I could not think it wise to put these back in the parent hive and kill such splendid young queens; and as I knew nothing about introducing I put each of these small swarms in a separate hive. Of course, by this time the parent hive had very few bees left, so I confined the queen to the bottom hive with a queen-excluder, and let the top story act as super; but they gave very few pounds of surplus after filling their hive nicely for winter.

This mistake proved even more disastrous than moving too late in spring or allowing the after-swarms. I had three after-swarms of splendid Italian bees with small patches of brood about as large as my hand, and scarcely any honey, so I decided to kill the vicious bees in a box hive and one colony of hybrids that had proved cross during the summer, and use these combs and stores for the after-swarms.

CROSS COLONIES AND HYBRIDS DESTROYED BY  
SULPHUR FUMES.

The last of October I had sand banked up around the two colonies; and, putting some coals in the smoker (another mistake, I presume), I then added a tablespoonful of sulphur for each hive, and drew away just enough sand to allow the mouth of the smoker to enter the entrance. I puffed the sulphur fumes into the hive for a couple of minutes, and drew the sand in place again, and left them until next day. Then the next day I had the old box cut away and then the combs were cut to fit the Hoffman frames. I filled one eight-frame hive with these. I then swept all the dead bees from the combs in the other eight-frame hive. Both hives were now ready, and I put one of the after-swarms into each hive and took



the other bees and swept part in each hive, paying no attention to the queen, supposing there would, of course, be a fight in the hive containing two queens until one was killed. I now had three frames from each of these after-swarms, with small patches of brood and a trifle of honey. I put these and one empty frame into an eight-frame hive and set it on top of a weak colony that had issued as a second swarm from the box hive of Italians. This colony was now put in a shed open to the south. This proved to be no mistake, as the following spring it was a strong colony.

The three colonies which had been united were a total loss. The hives were empty of honey in the spring. All the bees were dead in one hive, and there was little more than a handful in the other. I gave them two frames of brood and two frames of honey; but they were soon all dead, and the two frames of brood were lost also. I suppose they died out because I had taken from them their own larvæ; and the larvæ in the hives I put them in had been killed by the sulphur.

I wonder if there are many who have made so many mistakes in one year.

West Point Pleasant, N. J., Feb. 1.

## A WOMAN WHO CAN DO ANY KIND OF WORK ABOUT THE APIARY

BY MRS. C. DISHMAN

There are many women, widows and married, in Texas, who have good locations on their farms and ranches for bees, who would be glad to keep bees if they understood the business; and to such women I would suggest that they get some literature on beekeeping, and a few colonies of bees, and read and practice with a few at first. Many will not have a location for very many colonies; but even a few colonies properly taken care of will furnish honey for family use (and some to spare now and then); and those who have good locations, and money to invest in the business quite extensively might employ an experienced beekeeper for one or two seasons; and by working with him, and reading up on beekeeping, they could soon be making their own spending money, or possibly making much or all of a family's support. Women who are situated so that they can keep a good apiary can give profitable employment to their children as they become large enough to work; and by so doing interest them in work at home. At the same time their help would save the expense of hired help.

I know the first thing a woman thinks of when she considers working with bees is that dreadful sting; but a good veil and gloves will protect her from that annoyance.

I always carry a smoker when I go to work with bees. I can hive a swarm, wire frames, put in foundation, assort the combs, and do every thing I have tried to do about the work. I am not sure that I am handy enough with hammer and nails to put frames together as they should be; but my step-daughter can put them together nicely. Other women can do the same if necessary.

I can see no reason why women can not keep bees as successfully as men in many places in this west Texas country. If they will just go into it and stick to it they will be apt to find it pleasant and interesting, and in a few years they will have a very profitable business that will not necessarily interfere with housekeeping or poultry-raising, and such work as is usually carried on on ranches in this country. There is no extra expense in wintering bees in this country. We leave them on the same stands, winter and summer. This is very much in favor of women beekeepers on account of less lifting.

Del Rio, Tex.

## How One Woman Extracted Honey Without an Extractor

I was ten years old when my father started my interest in bees. There was a swarm, and after it had settled he told me if I could hive it I might have it; and if I prospered in the bee business I was to call on him for a hive whenever I needed one. Well, I prospered, as we usually do in a work we love. Experience taught me that the bee in many ways is almost akin to man, inasmuch as it wants its own home, and wants to manage it itself. I also learned to work with the bee, and let it have its own way, always when possible and consistent.

I did not have the unique appliances that are now within the reach of beekeepers; and as I read and study about modern conveniences I wonder that, in my rude way, I prospered as well as I did. I never clipped the wings of my queens, nor did I meddle with them in any way; and I never needed to do it. So as far as I could see she was always at her post and capable. I never lost a swarm that I knew of, for I was a most vigilant observer in my apiary.

I had no honey-extractor, but extracted my honey and made my wax at once by setting comb honey in the oven, just hot enough to do the work, taking it out as soon as done, and, when cool, I had both extracted honey and beeswax in one vessel. I took off the wax in a solid cake, and put it into a pan of water, boiled it, and let it cool; then it was ready for use or for sale. The honey I passed through a sieve, and canned it ready for sale or use, fully 12 lbs. of pure honey to the gallon.

I have found in my experience that "eternal vigilance" pays in the bee business fully as well as in any other, and I can not see why the business will not become a success in the hands of any intelligent man or woman.

Ellwood City, Pa.

MRS. J. S. RAMSEY.

# Heads of Grain from Different Fields

## KEEP SWEET

BY IRMA TRUE SOPER

Feelin' sort o' cross and blue?  
 Troubles can't be beat?  
 Luck the worst you ever knew?  
 Time to—jest "keep sweet."  
 Toothache? headache? work ain't done?  
 Can't keep things as neat  
 As you'd like to? 'Tain't much fun;  
 But—like bees—"keep sweet."  
 Winter time may be too cold  
 Jest to suit; but meet  
 Old weatherman with smiles so bold—  
 Like the bees, "keep sweet."  
 May be 'tother way around—  
 Don't like summer's heat;  
 But you'll see much joy you've found  
 If you'll jest "keep sweet."  
 If you'll try it, then you'll find  
 Troubles *can* be beat;  
 Keep on bein' lovin', kind;  
 Like the bees—"keep sweet."

Gladwin, Mich.

## Comb Honey Sells Easier than Extracted Honey

We have always found that it pays much better to run our apiary for comb honey than for extracted. Comb honey almost sells itself. We never yet have had so much but that we could have easily sold more. One year we had 39,000 lbs. After it was sold, a man wanting a carload wrote us regarding the matter.

If our bees are strong in time for the clover harvest any honey harvest they will work in the sections without any trouble. Thus it is easier for us to make a specialty of comb honey than extracted. Very few persons want extracted honey if they can get comb honey, and they are always willing to pay more for comb honey.

At one time we feel that we have a good market for extracted honey worked up, and then there comes a failure of a honey crop. Our old customers forget how they had liked extracted, and so we have to teach them over and over again; but comb honey sells on sight. I think one reason for this is that it looks so well on the table.

Bulk comb or cut-out honey pays well. If some colonies are too weak to work in supers they can be induced to store cut-out honey by placing old sections at the side of the brood-nest with a slotted division-board at the side of the brood-combs.

### CLEANING SUPERS AND HONEY-BOARDS.

For cleaning supers I put on the stove an old wash-boiler filled with water. As soon as it boils I add about a tenth of a can of lye, then put in a super. The propolis soon softens, and washes off easily. Turning it over and over, I rub it by means of a swab having a long handle until it is clean. I then put the super into a tub of water, and let it soak until I have cleaned another. If the propolis does not rub off easily, but just smears over, it is because there is not enough lye in the water. Keep the water near the boiling-point.

### HOT-WEATHER SHELTER FOR BEES.

I prefer trees as shelter from the sun because they not only afford shade but allow the air to circulate around the hive, and in the winter, when the leaves have fallen, the warm sunshine on the hive gives the bees a chance to warm up somewhat, and to change their brood-nest if need be.

Roseville, Ill.

MRS. L. C. AXTELL.

## How Rapidly Should Increase be Made?

Last September I purchased a beginner's outfit, Buckeye hive, etc. I should like to know how many colonies can be made from this colony, and how to go about it. I fed them sugar syrup, and they seem to be in first-class condition. What supers will fit the Buckeye hive? MISS EDITH F. MILLER.

Lake Geneva, Wis., Jan. 14.

[Before we could answer your letter fully we should have to know whether you wish to run these bees you have for increase alone or for some honey together with the increase. Ordinarily we think the latter plan is much the better one. An expert can run for increase alone, and increase one colony to fifteen or twenty under favorable circumstances; but we do not advise a beginner to attempt this. We think it is far better to allow the colony to swarm once, if natural swarming is allowed at all, and then prevent further increase, allowing both the swarm and the parent colony to produce honey. The next year the number of colonies can be doubled again, and so on. The trouble with making a rapid increase in one year is that there is likely to be trouble during the following winter, owing to the fact that many of the colonies will not be strong enough to winter profitably.]

If you intend to increase by artificial methods we would recommend the Alexander plan of making increase, as this plan possesses advantages that most other plans do not.

Any ten-frame super will fit your Buckeye hive, so that it really depends upon what style of supers you prefer.—Ed.]

## Daughters of Old Queens as Breeders

In May or June, 1910, I purchased a two-frame nucleus, and I now have three colonies of bees. Last year I lost the queen which I bought, but nevertheless my three colonies all have queens which are her daughters. I now want to know whether it will be all right to raise queens from them this year in making increase or would it be better to buy another queen to raise young queens from?

Slingerlands, N. Y.

MISS ALIDA M. PIER.

[If these daughters of the queen that you bought are purely mated, so that their bees are gentle and good workers, there is no reason why you should not breed from them the coming season. If the queens have mated with black drones, their workers will be irritable, of course. We should think one of them, at least, might be suitable to breed from. At any rate, breed from the best of the three. You would not necessarily breed from all the three, any way.—Ed.]

## Wintering Bees in Box Hives

I want to take up beekeeping. I have two old box hives. One is in a very sadly neglected condition. Some of the comb in it was broken when I received the bees. A good many bees were chilled and are dead, and I know that what are left will have to be fed. What can I do to get them through the winter? I am at a loss to know what to do with them as the weather in this climate is so changeable, and I don't want to lose them. The colony is not large.

I don't know when the queen is with them. How can I tell? Would it be of any use to know how?

Glencoe, Ky., Dec. 31.

MISS A. L. SCROGIN.

[We have our doubts as to whether you will be able to winter the colony you mention. After being moved as they were, and the combs broken down, the chances are that the bees will be dead before spring. As they are in box hives it will be practically impossible for you to tell whether the queen is with



them, or whether they have enough stores. Under the circumstances your best way would be to remove both hives to a well-ventilated dark cellar where the temperature will not go below forty degrees nor above fifty for any length of time. Then, because you are not sure, it would be best to feed warm sugar syrup, two parts of sugar to one of water. If you can get the top off the hive, feed this syrup in shallow dishes right next to the combs, and cover the top up in such a way that the bees can get to the syrup but can not get outside. Place the syrup in the hive late in the afternoon, so that by morning the bees will have quieted down somewhat. We recommend this, owing to the fact that the syrup stimulates the bees and stirs them up considerably, and in the day time they would be likely to fly out and die on the cellar floor. Candy would be safer.—ED.]

### Minimum Yield of \$10.00 Per Colony

I have been keeping bees for the past six years with good results. My bees never average me less than \$10.00 a colony, even though we are "away down by the sea." We have great bee feed in the far-famed Bay of Fundy marshes that abound in white clover of the finest quality.

MISS JULIA A. CORBETT.

Amherst Point, Nova Scotia.

### Extracting Unripened Honey; Proportion of Water in Honey and Nectar; Where to Store Extracted Honey

*Dear Sirs:*—Will honey that is extracted when bees are just beginning to seal it ripen in open tanks?

What proportions of honey and water do you take to make it the consistency of nectar?

Do you think it would be all right to store extracted honey after it is in cans, in a dry cement cellar, with plenty of ventilation, and with a cistern in it?

MRS. ALICE BURROWS.

Oran, N. Y., Feb. 2

[With proper facilities for ripening the honey artificially it can undoubtedly be done; but, at the same time, we do not feel like recommending the practice ordinarily. It is better, of course, if you wait until the bees have begun to seal the honey; but we think it is still better, all things considered, if the honey is nearly all sealed before it is extracted.

For the purpose of feeding back, extracted honey is usually thinned down so that the mixture is about 75 per cent of honey and 25 of water. However, such a mixture is not as thin as nectar by any means. Figures regarding the amount of water in nectar vary so much that it is difficult to arrive at definite conclusions. For instance, in the A B C and X Y Z of Bee Culture the percentage of water in four different kinds of nectar varies from 59 to 93 per cent. However, since three of the nectars contain more than 80 per cent of water it may be safe to consider 85 per cent as a safe average of the amount of water in nectar. The average honey may be said to consist of 80 per cent of solids and 20 per cent of water. Now, then, to find the amount of water that must be added to honey to reduce it to the consistency of nectar is a simple problem.

Starting with honey we have a liquid which is approximately 80 per cent solids. We wish to add enough water so that we have a liquid which is only 15 per cent solids, since, as we have explained above, we have selected 85 per cent as being an average amount of water in nectar. Supposing we take ten pounds of honey. Eight pounds of that amount is solids. Now, eight pounds is 80 per cent of ten, and 15 per cent of 53. We must add enough water to our ten pounds of honey, therefore, to bring the weight up to 53. Approximately, therefore, we must add 40 pounds of water—that is, four times the weight of the honey in question.

After honey is in cans, and the cans are sealed, it does not make very much difference where it is stored provided the atmosphere is dry so that the tin will not rust badly. Other things being equal, we should say that the warmer the room where honey of any kind is stored the better.—ED.]

### Starting with Three Colonies and Producing 2209 Pounds of Honey the Fourth Year

We secured 2209 lbs. of extracted honey last year from 19 colonies of bees, spring count, in spite of the drouth. We have sold 1900 lbs. at 10 cts., and kept 300 lbs. for our own use.

Our bees seem to be wintering in good order on their summer stands, although we lost a good many during the last cold spell, when the mercury went to six degrees below zero on the 8th of January. We have now 32 colonies, and this is our fourth year, with a start of three stands; that is, we have kept bees for four seasons.

Altus, Okla., Jan. 15.

JAMES G. REID.

### Rye Crop as a Substitute for Pollen

I feed my bees rye chop as a substitute for pollen. About the last of February or early in March we have the alder here. It blooms very early, and furnishes an abundance of pollen; but my bees start brood-rearing before the alder blooms, and search everywhere for a bit of chop or meal. It is cool some days; and if I did not feed them chop they would hustle out in search of pollen, become chilled, and die. When the weather begins to get warm, and I notice my bees searching feed-troughs and such places, I have some rye ground fine, and put it in pails or pans, and on warm days set it out in some sunny place. Thousands of bees will soon be working at it in a short time. Feeding rye chop has a direct effect on brood-rearing, as the bees could not do much without pollen or a substitute for it.

About the first of March, if the weather is favorable, I also feed my bees a syrup made of equal parts of granulated sugar and water, to stimulate brood-rearing if the weather is favorable. I think it pays to stimulate brood-rearing in the early spring, so as to have every colony strong in bees, and ready for the honey-flow.

Ethelfelts, Va., Nov. 26.

D. M. BRYANT.

### SUMMER'S MUSIC

BY ANNA M. CRAWFORD

Some love the song of the babbling brook,

As it ripples along on its way;

Some love the songs of the merry birds

That sing through the livelong day.

All this is the music of Nature's choir,

That tells of a life so free;

But give me the lull of the sighing wind

And the drone of the honey-bee.

These are the sounds which bring to my heart

The joys of a time to come—

Of buckwheat cakes on a winter's morn,

And sweets that drip from the comb.

And they also bring, with their buzz and hum,

The days of long ago,

When I wandered in childhood's meadow land

Through the fields where wild flowers grow.

Then future and past blend all in one;

And 'tis present joy that gleams

As I drowsily, lazily float away

To a land of beautiful dreams.

And I'm sure all the labor of life I've done

Is naught when compared with these,

For the greatest lesson of life is learned

From the hum of the honey-bees.

Denver, Col.

# Our Homes

A. I. ROOT

Blessed are the peacemakers, for they shall be called the children of God.—MATT. 5:9.

Our readers will recall how much I have had to say of late in regard to the need of peace and harmony between Prohibitionists and the Anti-saloon League—see p. 604, GLEANINGS for Sept. 15, and Homes of Nov. 1. Well, just before I left Ohio, Daniel A. Poling, Prohibition candidate for governor of Ohio, gave an address in Medina to a very small audience. It rejoiced my heart to find a man representing the party who had nothing but kind words for the Anti-saloon League, and next morning I had a long friendly talk with him. Well, to be brief, the *American Advance* has just gone into the hands of an "Advance" Publishing Co., and elected our good friend Poling President of said company. The clipping below from the *American Advance* of Feb. 1 explains itself. Once more may God be praised for answering my prayers, and for having raised up a Moses to lead his children "out of the wilderness."

## THE HANDCLASP VS. THE HAMMER.

Are the battering-ram and the big stick effective vote winners?

Should they be used indiscriminately in assault upon the enemy and in the recruiting quarters of our civic reform army as well?

There is no livelier question before the friends of prohibition at the present hour; and so well is it handled and answered by our clear-visioned young president, Mr. Daniel A. Poling, that we here give in full his views on the subject as detailed at the national conference Friday afternoon, January 17. We most emphatically agree with their spirit, their logic, and their practical timeliness in this hour when we realize as never before how gracious is our opportunity to increase our forces a hundred fold by earnest, sincere, broad-minded optimistic invitation.

Mr. Poling's remarks were specifically upon the topic, "The Attitude to be Assumed by the Prohibition Party toward Non-partisan Organizations." He said:

I am a party Prohibitionist. I hold no brief to-day for the non-partisan organizations. But uppermost in my mind and heart is the desire and consuming passion that our cause shall triumph. And let it be distinctly understood that I speak to myself as well as to you. It must also be borne in mind as I proceed, that I am not presenting the philosophy of the Prohibition party; that I am not expounding and defending the principles of our organization. My subject and the limit of time demand that I speak only on "Our Attitude toward Non-partisan Organizations." This is the subject assigned me.

1. What has been the attitude of the Prohibition party toward non-partisan organizations? Too frequently it has been that of the Pharisee. We have congratulated ourselves that we were not as other men. With irony and bitterness we have held ourselves aloof, and our political condemnation has been as was the spiritual condemnation of the Pharisee of old—we have not come down from the ballot-box justified!

We have denied to the non-partisan organization its very claim to efficiency. We have scoffed at white maps, declaring that the campaigns they represented

amounted to nothing, and have then demonstrated the fallacy of our position by pointing out the decline of the non-partisan movement when a dry county has gone back into the wet column. If the non-partisan movements had done nothing more than call out from the ranks of silence Hobson and Hanley and Folk and Blair and Stubbs and Littlefield, they would not have lived in vain.

Too frequently we have refused to co-operate in local fights where the issue was drawn squarely between the saloon and the home, between corruption and righteousness, between good government and bad, because we have insisted that the law under which the voters were acting was inconsistent and not in harmony with our party principles and the true philosophy of the great reform.

We have made indiscriminate and all-inclusive charges where we have not been able to establish our case in court. We have indulged in personalities—have, in some cases, elevated them to the plane of issues, and our charges have been couched in such generalities that ten times ten thousand men as sincere and brave and honest and unselfish as we can possibly be have had occasion to take personal offense. Our opportunity to reach and marshal them in a conquering political host has been destroyed.

The national speakers and the national press of the liquor organizations vie with each other in searching out and quoting the defamatory utterances of the Prohibition party when they direct their venom against the Anti-saloon League. As for myself, from this day forth I shall guard my tongue and check my pen that the common foe may find no missile of mine to hurl against the on-sweeping hosts of civic righteousness. There is a time for honest differences; there is a place for the frank and rugged discussion of conflicting methods in order that the right plan be found. That time is not in the heat of conflict; that place is not on the firing-line. I speak that which I do know when I say that there are countless men and women in the Anti-saloon League and other non-partisan movements whose souls are as clean and unselfish as the souls of the martyrs whose memories are my political inspiration. I am convinced that in the future we shall make progress only as we eliminate strife from among the temperance forces when they are engaging the enemy. We must purge our spirit.

Amos R. Wells, editor of the *Christian Endeavor World*, who voted the Prohibition ticket for the first time this year, received more cantankerous criticisms—ten to one—because he had not "always been with us" than letters of welcome and commendation because of his present "good confession." And he remarks, tritely, "Brethren, those letters go far toward explaining the small size of the Prohibition party."

The Prohibition party will never succeed by bitter and unrestrained criticisms of organizations that differ with it as to method, but stand with it for the destruction of the liquor traffic. The Prohibition party will never succeed by "rough tactics," by vitriolic denunciations, in winning the temperance men of the nation who are not giving it their approval and support.

We shall make progress faster and bring nearer more rapidly the victory's dawning by using our full strength in showing the wisdom and power of our way rather than by "showing up" the real or fancied weaknesses of the other ways. It is possible to insult the intelligence of men by trying to tell them too much. Nine times out of ten, indirect suggestion is more effective than direct. And when we are sorely tempted, when we are refused by those who should be our voting friends, let us remember that "charity suffereth long and is kind." Out of



*these very furnaces of expediency and denial will come the tempered metal of the final test.*

#### WHAT OF THE FUTURE?

Our attitude must be the attitude of a big man with a big task—a task that he is conscious of not having completed. Such a man is glad for suggestions, is willing to consider new plans, is ready to exchange outgrown policies for more effective methods. He will sacrifice every thing—his pet schemes, his personal desires, his long-established judgments—every thing save *principle*, for the consummation of the truth. I have never been more firmly established in the faith that the liquor institution will not be destroyed until we elect to power a political party committed to its destruction. Upon this rock I stand, but I will not impute spurious motives to the man who is not with me agreed. *Win him* I will if I can.

Our attitude must be the attitude of a sincere organization that has made mistakes—for we have made grave mistakes, and we should not be inclined to throw stones.

Our attitude must be the attitude of an organization conscious that it is responsible for electing, as well as for electrocuting; for winning, as well as for skinning! The intelligent, patriotic voters of the United States of America, the men and women who are thinking temperance to-day, will not be driven or coerced. They must be won.

Our attitude must be the attitude of an organization so conscious of its place and motive that it seeks opportunities to co-operate with all other temperance and no-liquor organizations in programs of common agreement. By so doing, far from losing our identity, we emphasize it. And, men of the Prohibition party, Ohio leads the way. In co-operation with the W. C. T. U., the Christian Endeavorers, the Sunday-schools, and the Anti-saloon League she has adopted as part of her educational propaganda *The Voters' Information Bureau* established by the W. C. T. U., and superintended by Mrs. Lillian Burt of that organization. This bureau, I am convinced, will do more to develop intelligent and permanent anti-liquor sentiment among the masses that will eventually crystallize into votes than any other movement that has arisen in this generation.

Our attitude must be the attitude of an organization too busy to gossip. We do well to remember that the gossipier is always despised.

And finally, brethren! The attitude of the Prohibition party must be the attitude of an organization conscious that it has a positive, progressive, constructive program vital to the life of the republic. And in this spirit, with the faith of the fathers, and building better than they knew, let us give to the temperance and Prohibition hosts the slogan of war—*The liquor institution must be destroyed, and there shall be no fratricidal strife.*

## High-pressure Gardening

THE HIGH COST OF LIVING, ETC.; SOMETHING ABOUT GOD'S NEW AND PRECIOUS GIFTS.

To-day is January 2, 1913, and so far it has been indeed a happy New Year to me. Let me tell you a few things that have made me happy. On New Year's day a beautiful lot of Buttercup chickens came out of the incubator, and on that same day one of my Indian Runner ducks that *would sit* brought out a brood of ducklings, hatching every egg. I tell you it is wonderfully nice and enjoyable to have a nice little room for a new brood of chicks and another nice room for a brood of ducklings; and then a nice little yard adjoining each one of them. My first brood of Buttercups are now a little over three weeks old; and when I open the door in the morning to let them go out they go out on the wing. The doorstep is a little bit high, so they have learned, in order to save the trouble of climbing over it, just to spread their gauzy wings and sail out like a Wright flying-machine, for all the world. Now another thing that makes them so handsome is their spotted wings, looking for all the world like a brood of partridges. Besides, we have a very pretty garden of sweet potatoes, common potatoes, early peas, lettuce, mustard for the chickens, etc. The thing that has made me happy and set me to thanking God most of all, *just now*, is a new vegetable sent out by the Department of Agriculture. I saw it mentioned in some of the rural Florida papers, and so I sent to Washington and asked them if they

could furnish me some of the tubers. The night before Christmas, when I went to the postoffice I found in my box a card saying, "Package too large to go in the box. Present at the office." This was Christmas eve, remember. When I presented my card, a little bag holding perhaps a couple of quarts of something that looked like potatoes was handed me. I at once decided that it was the new "dasheen," and I also decided that, of all the Christmas presents I have had in seventy years, I do not know that I have ever gotten hold of one that I liked more than this little bag of dasheen. In order to tell you all about it, I am going to quote the printed matter sent me by the Department of Agriculture at Washington:

#### THE DASHEEN; A NEW ROOT CROP FOR THE SOUTH.

The dasheen is a vegetable from the tropics, related to the ornamental caladium, or elephant-ear, the Hawaiian taro, and to the semi-wild tannier of our southern States. It is much superior to the tannier in quality, and is as easily cooked as the potato. It is one of the great staple food plants of the tropics. Its tubers are similar to the potato in composition, but are drier, and contain from 35 to 75 per cent more protein. The flavor of the cooked tubers is slightly suggestive of boiled chestnuts. Dasheens are baked, boiled, or otherwise cooked, like potatoes.

Dasheens when baked are richer in flavor than baked potatoes. After boiling they may be French fried, mashed, made into croquettes, or used as stuffing for chicken, veal, or other meats.

Although the tubers of the best varieties are not acid, there is always some danger of an acid variety being mixed with them; and for this reason it is better *never to taste the raw tubers*. The burning sensation, caused by this acidity when present, may not be felt for a minute or more after tasting.

Where the frostless season is less than five months, the tubers for planting should be started in sand under glass. Harvesting should be done before frost, and the tubers allowed to dry in the shade for several days before storing.

In storage the tubers must be kept dry, and a free circulation of air allowed among them. They should, therefore, be spread out in rather thin layers. The corms (large central "tubers") are more liable to decay than are the smaller tubers.

The leaves of the dasheen make an excellent substitute for spinach or other greens. On account of their acidity, however, they should *never be tasted raw*. Only the blade of the leaf is used. Of this, remove the thick portion of the midrib, and then boil for not less than 12 to 15 minutes in water to which baking soda at the rate of one teaspoonful to a quart of water has been added. Drain off the soda water, wash with clear boiling water, and then boil for 45 minutes in water seasoned with salt. Other seasoning may be added as desired. Dasheen greens are also cooked by boiling for about 30 minutes with fat meat. Soda is unnecessary with this method. The petioles, or leaf stems, cooked separately from the leaf blades, make a delicious dish. The same methods of cooking may be used, except that, when soda is used, it is better to pour on cold water for the second boiling, and boil for only 15 minutes.

#### THE DASHEEN AS A CROP, AND ITS INTRODUCTION INTO THE UNITED STATES.

The first experiments made by the Department of Agriculture in the culture of the dasheen, taro, and related root crops, were at the Porto Rico and Hawaii Experiment Stations. A considerable number of varieties from tropical America were collected at the former station, and variety tests were conducted. Following this, in 1905, specimens of the entire collection were brought to Washington and grown in the Department greenhouses. Additions were made to the collection from all parts of the tropics and the Orient, until there has been assembled what is doubtless the largest collection in the world of these useful plants.

From 1906 to 1909 small co-operative experiments in growing these root crops were made in nearly all the southern States, but without very definite results until the latter year, when a one-sixth-acre plot in rich bottom land in Berkeley County, South Carolina, produced 50 bushels of tubers. The most important feature of that year's work was the demonstration that, of all the varieties tested, certain dasheens, which were originally obtained from the Island of Trinidad, British West Indies, were among the best in point of yield, and greatly superior to all others in quality. These Trinidad dasheens, planted 3 to 4 feet apart, produced an average of 7 pounds to the hill, or at the rate of over 400 bushels per acre.

The next season was unfavorable, and satisfactory results were not obtained at the South Carolina plantation; but a preliminary experiment in freshly broken rich "hammock" land at the new Plant Introduction Garden of the Department at Brooksville, Fla., showed that conditions there were favorable for dasheen culture, and in the spring of 1911 a half-acre of heavy-yielding varieties was planted. The half-acre at Brooksville yielded 225 bushels of tubers. About one-third of this was of the Trinidad variety. The soil is a black, very rich sandy loam. Two light applications of fertilizer were made, in the middle and latter parts of the season. Harvesting was done early in November, the crop having had a season of about seven months.

It is no longer a question whether the dasheen will find favor in the United States. It has been served repeatedly on the tables of some of the most fastidious, and has been pronounced a valuable addition to the menu. It was successfully served at the

annual banquet of the National Geographic Society in Washington in January, 1911, and, after a special test, was reported upon favorably by the house committee of an influential New York club.

The Department believes that all southern home gardens having suitable conditions of soil and moisture should contain at least a small area of dasheens, and that a regular market for the surplus over what is needed for home consumption can quickly be created when a steady supply is available.

The little bag which was my Christmas present contained just nineteen tubers; and although these little tubers were very precious, at least to me, I decided that we would have to make a test of one of the smaller ones by having it baked for breakfast. So on Christmas morning we had our first feast of the new potato, or whatever you might call it, served for breakfast. The tuber is remarkably hard and solid. I think they are heavier for the bulk than any potato. When I tell you that the first taste convinced me that it was the most delicious baked potato I ever got hold of in my life, that does not half tell it. Mrs. Root quite agreed with me, although she isn't gifted in becoming over-enthusiastic on new and comparatively untried things. The remaining eighteen tubers were carefully planted, and at this date, Jan. 17, they have all begun to sprout, but none of them are, as yet, above ground. Some of my friends who have read our new potato-book will see what I had to say about my roasted-chestnut potato of years ago. Well, this dasheen resembles that roasted-chestnut potato more than any thing else I have ever gotten hold of. It was so dry and mealy that, when mashed with a fork, the inside rolled out as fine as flour, and looked about as white as flour. I am sure it will prove to be one of the most nourishing and most delicious articles of food that our heavenly Father has ever given to his children.

I have in years past been enthusiastic about a great many new fruits and vegetables, as our older readers may recall. Many of them, it is true, have not quite come up to my expectations. Some of them, although they flourish in the locality where they originated, do not seem to do so well when moved to other places. The Gault raspberry, perhaps, is an illustration of one of this type.

Some of our older readers may remember how enthusiastic I was in regard to the Kumerle lima beans. On getting a 25-cent package of these beans and testing them for quality I became so enamored with the new bean that I finally offered their weight in gold for a few of the precious seeds. The Livingston Seed Company of Columbus, Ohio, finally agreed to part with \$75.00 worth of these Kumerle beans for their



weight in gold. They were impressed similarly to myself. It soon transpired that this bean succeeded in only a few localities, and even then only under extremely favorable seasons. After trying in vain to grow it in sufficient quantities so as to make each reader of GLEANINGS a present of a few of these wonderfully luscious beans, I gave it up; but three or four years afterward, when we had a season that just suited it, I grew quite a considerable crop. Another thing, it didn't always produce beans of such wonderful excellent quality on all sorts of soils. This is something that we have all had to learn in testing new things.

I was one of the first to demonstrate that celery could be grown on our Medina County soil. Now the crop grown in that region amounts to many thousands of dollars.

The Grand Rapids lettuce, that I discovered and introduced to the world, and gave it its name, has also been the means of furnishing the material for a great industry, for there are now *acres* and *acres* of Grand Rapids\* lettuce grown *under glass* in Ohio alone. I do not know how many acres there are in other States devoted to this at the present time.

In a letter that I have recently received from the Department of Agriculture, they promise to furnish me more tubers if I can make use of them. Now, I tell you confidentially what my plan is. As soon as I can get enough of them I want to make a present of a dasheen tuber to every reader of GLEANINGS—that is, to every one who sends the subscription price for one year. It seems to be more exactly suitable for Florida soil and Florida conditions than for any other part of the United States. If I can only make it grow as we are now making sweet potatoes grow, I shall be indeed happy. Before we went home last spring we got some sweet-potato vines over at neighbor Rood's, and just cut them up into short pieces and planted them throughout our garden, where other crops had been gathered off. Well, they had little care during the summer; but when we came back in November we found such a great crop of sweet potatoes that we had all we could use, and enough to give the neighbors, right and left. May God be praised for the sweet potato, and more for the great dasheen which is just now being disseminated throughout our land.

\* In an article about "Truck Farming Under Glass," *The Country Gentleman* says: "The Grand Rapids lettuce has revolutionized the culture of this most important greenhouse crop."

The sorghum or sugar cane that the Department of Agriculture introduced something like forty years ago, produced on rather poor clay soil a quality of cane that made a most delicious syrup. The same sugar cane, when grown on rich bottom land, produced a syrup or sugar that most people would call hardly worth putting on the table. Let us now go back to the dasheen.

At our weekly prayer-meeting I mentioned the dasheen as one of God's new and most precious gifts to men. Our good pastor told me that the excitement was so great around Brooksville, Fla., where the Department of Agriculture has been carrying on test gardens, that it has really been the means of building up the place from what before was an obscure village; and as this new vegetable seems to succeed better so far in Florida than anywhere else, there seems great promise that it shall mean the building up of the whole State of Florida. Just think of it! The most delicious tuber that has ever been given to mankind, yielding at the rate of four or five hundred bushels to the acre!

In speaking of God's gifts, let me repeat a little instance that occurred when I was in California. A real-estate dealer, after asking me a multitude of questions, and finding he could not sell me any real estate, finally said, "Well, stranger, what is your occupation? What do you do for a living, may I be permitted to inquire?" I replied to him that my occupation just then was hunting up God's gifts. He looked at me a little while, thinking perhaps I was half crazy or something of that sort. But he finally asked, "Well, stranger, if you are hunting God's gifts, I take it for granted you don't find many of them up here in this desert."

I replied that I had been delighted from morning to night in finding such an innumerable number of God's greatest and most precious gifts, and I hoped to be able to spend the rest of my days in this wonderfully exciting and happy occupation of searching God's great wide universe for his wonderful gifts to men.

By the way, can any of my readers tell me whether any seed catalog they have gotten hold of mentions the dasheen? Have the seedsmen of our land gotten hold of it? If anybody has had any experience along that line, or grown dasheen or something resembling it, I should be very glad indeed to have the full particulars.